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SURRENDER OF THE CITY OF PTOLEMAIS, OR ACRE, TO THE CRUSADERS

Every country of Europe had poured forth its soldiers to take part in the siege of Acre which had already lasted twenty-two months when Richard Cœur de Lion and Philippe-Auguste of France reached the Holy Land to meet the armies of Saladin. Together they carried on the siege. At length, after nearly three years, during which armies had been almost annihilated and then reconstructed with fresh recruits, the Saracens were reduced, by famine, pestilence and exhaustion to the necessity of the surrender. In the scene here reproduced from a French painting, the besieged are laying down their arms and delivering up the keys of the city to the kings surrounded by their armies. The terms agreed to were that the true cross should be given up to the allies, 1000 men and 200 knights in captivity were to be surrendered, the sum of 200,000 pieces of gold was to be paid within forty days, failing which the inhabitants of the city were to be considered at the mercy of the conquerors. The English and French armies were then instructed not to harm any who should leave the city. On entering Acre each nation represented took possession of one of the quarters. Under one pretext or another Saladin delayed, and did not carry out the terms. Richard, irritated, massacred 5000 Moslems—an act which was regretted by his whole army. Date, A.D. 1191.

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THE INTERNATIONAL CONTROL OF DRUGS OF ADDICTION.

THE PRESENT POSITION OF THE INTERNATIONAL OPIUM CONVENTION, 1912.

BY

SIR WILLIAM J. COLLINS, K.C.V.O., M.D., M.S., B.Sc.LOND., F.R.C.S.ENG.,

A BRITISH PLENIPOTENTIARY AT THE HAGUE INTERNATIONAL OPIUM CONFERENCES, 1911-12, 1913, AND 1914.

It may be of interest to review, at the present time, the question of the international control of drugs of addiction and the present position of the International Opium Convention of 1912, which is the chief instrument whereby the traffic in so-called "habit-forming drugs" may be restricted to medical and legitimate purposes only.

The BRITISH MEDICAL JOURNAL of August 31st and September 14th, 1912, contained full accounts of the Proceedings of the First International Opium Conference held at the Hague in the winter of 1911–12, and of the Convention which was there and then drawn up and signed by the twelve Powers there represented. In the JOURNAL of April 10th, 1915, there was an account of the Proceedings of the Third International Opium Conference, held at the Hague in June, 1914, only a few weeks before the outbreak of the great war. In that article a summary of the then position contained in a report made by Mr. Max-Muller and myself, who had acted as British Plenipotentiaries at all the three Conferences, was quoted as follows:

"At the close of the *first* Conference twelve Powers had signed the Convention which they had participated in drafting, and thirty-four Powers were invited to attach their signatures.

"At the close of the *second* Conference thirty-four out of the total of forty-six Powers had signed the Convention, and twelve had not then done so, while eight Powers had either ratified it or were disposed to do so.

"At the close of the *third* Conference forty-four out of the total forty-six Powers have signed the Convention, eleven have ratified it, and fourteen more are disposed to do so, while not one of the remaining nineteen signatories has expressed any intention of not proceeding to put the Convention in force. Moreover, all the signatories present were desirous that respectful representations should be pressed upon those which had not deposited their ratifications to do so as soon as possible."

By a resolution of the Conference it was further provided that a special protocol should be opened at the Hague for signature by such Powers as were willing to proceed to put the Convention in force without awaiting ratification by other signatory Powers.

Thus the matter stood when the conflagration broke out in August, 1914, and put a stop for five years to any further international proceedings as regards the greater part of Europe.

In our report to the Foreign Office (Parliamentary Paper Cd. 7813) my co-delegate and I said:

"We are under no illusion as to the influence which events which have occurred since the rising of the Conference must have upon all international concert of the nature contemplated by the Opium Convention. Humanitarian aims of the kind which invoked these three Conferences and inspired their constructive work must suffer eclipse or serious retardation during a time of warfare. We nevertheless recall that one of the first objects attained in 1815 at the Congress of Vienna, after the close of the Napoleonic wars, and on the initiative of the British representative, was an international declaration of the abolition of the slave trade.

"We trust that when, in the course of time, international relations are resumed, the progressive stages in abolishing the abuse of opium and other kindred drugs may be resumed, and that the efforts of the three International Conferences may achieve the beneficent objects which from first to last inspired those who have borne their part in these deliberations."

On October 24th, 1918, when there appeared some prospect of the cessation of hostilities, I put a question to Lord Robert Cecil in the House of Commons as to the position of ratification and enforcement of the Convention and of the special protocol of 1914. Lord Robert Cecil replied:

> His Majesty's Government are still considering the question of putting into force some or all of the articles of the International Opium Convention without waiting for its ratification by all the signatory Powers.

The armistice was signed on that ever-memorable date, November 11th, 1918, and it seemed important to press the question of the international control of drugs of addiction upon the notice of the public, and especially on that of our representatives at the approaching Peace Conference at Paris. On December 24th, 1918, I had a letter in *The Times* calling attention to recent disclosures of the abuse of cocaine, opium, and morphine, urging the need for the restrictions which the enforcement of the Convention would impose, and action by our representatives at the Peace Conference, adding "the occasion is ripe and the opportunity a great one."

On March 10th, 1919, Sir James Agg-Gardner kindly put a question for me to Mr. Cecil Harmsworth, Under-Secretary for Foreign Affairs, and was assured that

> His Majesty's Government hope to be able to bring the question of international co-operation in the control of drugs before the Peace Conference, with a view to the adoption of a resolution binding the Powers represented at the Conference to the speedy enactment and enforcement of the laws, regulations, and measures contemplated by the Opium Convention of 1912 for the purpose of confining to medical and legitimate purposes the manufacture, sale, and use of opium, morphine, cocaine, and similar noxious and habit-forming drugs, such a resolution to be made binding on the enemy Powers.

In correspondence with Lord Robert Cecil, then in Paris, I received his assurance that it was hoped that "a satisfactory solution of the question of the Opium Convention would be arrived at" at the Conference; and in his speech at the public session of the Conference on February 14th, on the League of Nations Covenant, he urged the need for effective international co-operation on this question.

On April 29th the text of the League of Nations Covenant was published, and on June 28th the whole Treaty of Peace, including the revised Covenant, became public property.

An examination of the Treaty of Peace shows that under its provisions great progress is secured for the operation of the International Opium Convention of 1912. Under Part I, article 23 (*c*)—that is to say, in the Covenant of the League of Nations, it is provided that—

> Subject to and in accordance with the provisions of International Conventions existing or hereafter to be agreed upon, the members of the League will entrust the League with the general supervision over the execution of agreements with regard to the . . . traffic in opium and other dangerous drugs.

Again, under Part X, Section II, dealing with treaties, there is a very valuable article, No. 295, specifically providing for the ratification and enforcement of the Opium Convention of 1912, alike by signatories and non-signatories, who have hitherto failed to ratify, as well as the endorsement by them of the Special Protocol adopted by the Third Opium Conference in 1914. Article 295 runs as follows:

> Those of the High Contracting Parties who have not yet signed, or who have signed but not yet ratified, the Opium Convention signed at the Hague on January 23rd, 1912, agree to bring the said Convention into force, and for this purpose to enact the necessary legislation without delay and in any case within a period of twelve months from the coming into force of the present Treaty.
>
> Furthermore, they agree that ratification of the present Treaty should in the case of Powers which have not yet ratified the Opium Convention be deemed in all respects equivalent to the ratification of that Convention and to the Signature of the Special Protocol which was opened at the Hague in accordance with the resolutions adopted by the Third Opium Conference in 1914 for bringing the said Convention into force.
>
> For this purpose the Government of the French Republic will communicate to the Government of the Netherlands a certified copy of the Protocol of the deposit of ratifications of the present Treaty, and will invite the Government of the Netherlands to accept and deposit the said certified copy as if it were a deposit of ratifications of the Opium Convention and a signature of the Additional Protocol of 1914.

Among the concluding paragraphs of the Treaty of Peace is one providing that it will itself come into force from the date upon which the first *procès-verbal* of the deposit of ratifications is drawn up announcing that the Treaty has been ratified by Germany on the one hand and by three of the Principal Allied and Associated Powers on the other.

Now, according to the latest note from the Hague, with which the Netherlands Minister, His Excellency M. de Marees van Swinderen, has courteously favoured me, the

Powers may be classified as follows in regard to their attitude towards the Opium Convention of 1912:

A. *Signed and Ratified Convention and Signed Special Protocol.*

1. China.
2. Honduras.
3. Netherlands.
4. Norway.
5. United States.

B. *Signed and Ratified Convention but not Signed Special Protocol.*

1. Belgium.
2. Brazil.
3. Denmark.
4. Ecuador.
5. Great Britain.
6. Guatemala.
7. Italy.
8. Nicaragua.
9. Portugal.
10. Siam.
11. Spain.
12. Sweden.
13. Uruguay.
14. Venezuela.

C. *Signed Convention but not Ratified.*

1. Argentine.
2. Chili.
3. Costa Rica.
4. France.
5. Haiti.
6. Luxemburg.
7. Mexico.
8. Bolivia.
9. Bulgaria.
10. Columbia.
11. Cuba.
12. Dominica.
13. Germany.
14. Greece.
15. Japan.
16. Montenegro.
17. Panama.
18. Paraguay.
19. Persia.
20. Peru.
21. Russia.
22. Rumania.
23. Salvador.
24. Switzerland.

The first seven of these had before the war expressed their intention to ratify.

D. *Not Ratified nor Signed Convention.*

1. Austro-Hungary.
2. Serbia.
3. Turkey.

Greece, although not appearing as a signatory in the official list from the Hague, was announced by M. Loudon as having signed without any reserve at the final session of the 1914 Conference, and is therefore included under C.

It will be observed that by the terms of the Treaty of Peace all those Powers which are party to it, whether signatories or not of the Opium Convention and if signatories who have not ratified it, are at once transferred into the first category as if they had both ratified the Convention and signed the Special Protocol. This applies to:

1. France.
2. Japan.
3. Bolivia.
4. Cuba.
5. Greece.
6. Haiti.
7. Panama.
8. Peru.
9. Rumania.
10. Serbia, and
11. Germany.

The first two being among "the Principal Allied and Associated Powers" and the last being the other "High Contracting Party." Presumably the new Powers mentioned in the Treaty of Peace—that is, the Hedjaz, Liberia, Poland, Slovene State, and Czecho-Slovakia—will be in the same case, as they have "not yet signed," not having yet been invited to do so, and therefore "have not yet ratified," the Opium Convention of 1912. All these Powers will therefore be under obligation "to enact the necessary legislation without delay, and in any case within a period of twelve months from the coming into force of the present Treaty," and will be held to have signed "the Special Protocol of 1914 for bringing the Convention into force."

It does not appear from the terms of the Peace Treaty that those Powers which had already ratified the Opium Convention will be similarly bound by the terms of the Special Protocol of 1914, unless and until they have signed it. This applies to the case of Great Britain and of Belgium, Brazil, Denmark, Ecuador, Guatamela, Italy, Nicaragua, Portugal, Siam, Spain, Sweden, Uruguay, and Venezuela.

The cases of Bulgaria, Austria, Hungary, and Turkey remain to be dealt with.

It is pretty clear that some time must elapse before all the Signatory Powers and those who have not already signed are in line with those which either voluntarily or under duress shall have undertaken to conform to the Special Protocol—that is, to put the Convention into force without waiting for the adhesion of the rest. It would obviously be advantageous if all the fourteen Powers which have ratified the Opium Convention were voluntarily to sign the Special Protocol forthwith. The coming into force of a Treaty or Convention (*mise en vigueur*) is not the same thing as putting into force the legislation which flows from that Treaty, and it behoves all those Powers which desire to make up for the delay which the war has caused in the effective international control of drugs of addiction to get ready the legislation which ratification of and putting into force of the Convention imply.

To this end and with a view to ascertain how we ourselves stand in this matter, I requested Sir James Agg-Gardner to put the following question on May 7th, 1919:

Whether, in view of the incorporation of the effectuation of the Opium Convention in the Covenant of the League of Nations, and the amendment of pharmacy law which must follow the enforcement of the Convention, it is proposed to introduce legislation for that purpose this session.

The Home Secretary replied:

Instructions have already been given for the preparation of a bill on the subject, but I cannot say at present whether it will be possible to pass it into law this session.

Now, it will be remembered that under D.O.R.A. Regulations 40 and 40 *b* certain restrictions were temporarily placed upon the supply to the public of opium and cocaine, and of opium, morphine, and cocaine to members of His Majesty's Forces, and that by proclamation made under the Customs Consolidation Act, 1876, the import of cocaine and opium was restricted as if the drugs were "arms, ammunition, or gunpowder."

These temporary limitations, which are considerably in excess of our ordinary pharmacy legislation, but yet not thoroughly effective, will before long come to an end, and it becomes a question whether the new legislation flowing from the Opium Convention will be ready and in force against their withdrawal. Again by the favour of Sir James Agg-Gardner, the following question was recently addressed to the Home Secretary:

Whether Regulations 40 and 40 *b* under the Defence of the Realm Act, restricting the use of opium, morphine, and cocaine, will cease to be operative before the projected pharmacy legislation to give effect to the provisions of the International Opium Convention, 1912, has been enacted.

Mr. Shortt's rather cryptic and cautious reply was:

I hope Parliament will agree to keeping Regulation 40 *b* in force long enough to allow legislation to be passed to give effect to the International Convention.

Inasmuch as there is considerable hostility to keeping D.O.R.A. in operation or to continuing regulations made under that exceptional instrument, as well as grave doubt as to the legality of proclamations issued under the Customs Consolidation Act, 1876, restricting the import of commodities not *ejusdem generis* with "arms, ammunition, and gunpowder," it is of the utmost importance that Great Britain should set an example by expediting the enactment of such pharmacy legislation as will be necessitated by the coming into force of the Opium Convention.

One need only cite two of the articles of that Convention to show how far-reaching the reform of our present pharmacy laws will require to be. Article 9 of the Convention provides that:

"The Contracting Powers will enact pharmacy laws and regulations, so as to limit the manufacture, sale, and use of morphine, cocaine, and their respective salts to medical and legitimate uses only, unless such laws already exist. They will co-operate amongst themselves in order to prevent the use of these drugs for any other purpose."

Various measures are then set out whereby the Contracting Powers will use their best endeavours to control the manufacture, import, sale, distribution, and export of these aforenamed drugs. Moreover, by Article 14 (which reproduces a resolution I submitted as chairman of the Technical Commission) it is further provided that—

"the Contracting Powers will apply the laws and regulations for the manufacture, import, sale or export of morphine, cocaine, and their respective salts, to (*a*) medicinal opium; (*b*) to all preparations (officinal and non-officinal, including the so-called anti-opium remedies) containing more than 0.2 per cent. of morphine or more than 0.1 per cent. of cocaine; (*c*) to heroine, its salts and preparations, containing more than 0.1 per cent. of heroine; (*d*) to every new derivative of morphine, cocaine, or their respective salts, or to any other alkaloid of opium which, as the result of scientific research, shall be generally recognized as giving rise to analogous abuse or as producing the same injurious effects."

It would be well if the Home Office bill, which has already been drafted, were made public as soon as possible, not only that pharmacists and the public generally may study its terms, but also to indicate to our Dominions and other Contracting Powers the nature of the control of the manufacture, import, sale, distribution, export, and use of these drugs of addiction which the Convention requires and the bona fides of Great Britain in giving effect to those restrictions for which her representatives were instructed to press.

ON THE NATURE OF RABIES AND ANTIRABIC TREATMENT.

BY

SIR DAVID SEMPLE, M.D., D.Sc., D.P.H.,

LIEUT.-COLONEL R.A.M.C.(R.),

CONSULTANT IN RABIES TO THE MINISTRY OF HEALTH; LATE DIRECTOR OF THE PASTEUR INSTITUTE, INDIA, AND OF THE CENTRAL RESEARCH INSTITUTE OF INDIA; LATE DIRECTOR-GENERAL OF THE PUBLIC HEALTH DEPARTMENT, EGYPT.

(*Concluded from p. 336.*)

X. ANTIRABIC TREATMENT.

PERSONS bitten by rabid animals should apply for treatment as soon as possible; not a day, not even one hour, should be unnecessarily wasted. This applies more especially to cases in which the bites (or other methods of infection) are situated on the head, face, or neck, and to severe bites on the wrists or hands, or on the exposed skin where nerves are plentiful.

The object aimed at is to immunize the patient against rabies before the virus implanted in the wound by the animal which inflicted the bite reaches the nerve centres. Should the virus succeed in reaching the nerve centres before immunity has been conferred, no treatment yet devised will save the patient. These few remarks, taken in conjunction with the explanations in Section IV as to how infection takes place, are the reasons why early treatment is advocated.

Antirabic Vaccines.

The material used for antirabic treatment is prepared either from the spinal cords, or from the brain, medulla, and spinal cords of rabbits which have died from rabies after inoculation with "fixed" rabies virus.

The virus, being of a fixed virulence, may be termed a "vaccine" when prepared for use; but the method of preparation varies in different Pasteur Institutes.

Dried Cord Method.

Pasteur's original system was to dry the spinal cords hung in glass jars over caustic potash or caustic soda, under fixed conditions as to time, temperature, humidity of the atmosphere and the exclusion of light, and for varying periods up to fourteen days from the time the fresh cords were removed from the rabbits. When a cord was treated under these conditions for fourteen days he found that it had lost all its virulence, but when dried for three days the virulence was practically the same as a fresh cord. Attenuation of the virus in the cords commences after the third day of drying, and is completed from the twelfth to the fourteenth day, but is, practically speaking, a weak or attenuated virus after the eighth or ninth day.

From cords treated in this manner a series of vaccines of different degrees of strength can be prepared. Pasteur commenced treatment by injecting vaccines prepared from cords which had been dried for fourteen days, and then from cords which had been dried for thirteen, twelve, eleven, ten days, and so on down the scale to cords which had been dried for three days only. By this means he was able to commence the immunization of his patients with vaccines which were perfectly safe, but established a degree of immunity sufficient to render the subsequent injection of living and virulent virus also quite safe.

The dose for an adult consists of 1 cm. of cord finely ground down in 3 c.cm. of a sterile fluid such as normal saline solution, and injected into the subcutaneous tissue on the side of the abdomen; it corresponds to about a 5 per cent. cord emulsion. This method modified in various directions is what is known as the "dried cord method" of treatment. It has undergone many modifications since Pasteur's time, but the system is essentially that of Pasteur. A modification which is sometimes used, especially when the vaccine is sent to a distance, is to dry the cords from two to six days and preserve them in glycerin in a cool chamber.

Dilution Method.

Some time after Pasteur inaugurated his system of treatment Högyes of Buda-Pesth introduced a method of antirabic treatment by injecting high dilutions of living and virulent virus to begin with, and gradually going on to lower dilutions. In this method, which is known as the "dilution method" of treatment, it is convenient to begin by making a 1 per cent. dilution of virus from the fresh cord or medulla, and from this to prepare any dilutions required. The treatment is commenced by the injection of a highly diluted virus, such as 1 in 10,000, or 1 in 6,000 in some institutes, and 1 in 4,000, or even 1 in 2,000 in others, and gradually going on from day to day to a less diluted virus, such as 1 in 500, 1 in 200, or even a 1 per cent. dilution.

This method has been adopted by several antirabic institutes. It has the merit of being easier to carry out and less expensive than the method advocated by Pasteur and his followers; but whether it is the safest and best method which science can devise in the absence of exact knowledge about the causal micro-organism of rabies is a disputed point.

Antirabic Serum.

In some institutes the use of an antirabic serum prepared by immunizing sheep or horses has been had recourse to either as a preliminary to the usual antirabic treatment being carried out or to sensitize the living vaccine. In 1902, when Director of the Pasteur Institute of India, Kasauli,[4] I immunized two horses to a very high degree with rabies virus; they produced a serum which was highly rabicidal when mixed with living rabies virus. In a mixture of 1 part serum to 3 parts of a strong virus emulsion the virus was destroyed in a few minutes at room temperature; normal horse serum is devoid of this property. I used the serum hypodermically as a preliminary to the ordinary treatment in badly bitten and late cases, my object being to confer a passive immunity pending the acquirement of an active and more lasting immunity as the result of treatment. Preliminary treatment with antirabic serum was administered to 202 cases; but owing to the fact that the serum treatment was followed by ordinary treatment, it is difficult to say whether any real benefit was derived from the serum. In a number of the more severely bitten of these cases, most of them bitten by jackals, the serum was also injected into and around the wounds, with the object of utilizing its rabicidal effects on the virus locally; none of these cases developed hydrophobia; but here again the treatment which followed the serum may have been all that was required to save them. The subject is one which requires further investigation.

It will be noted that in the methods of treatment I have described a living virus is used. In the "dried cord" method a living virus is not used until after the commencement of treatment by a dead or attenuated virus; but in the "dilution" method, and in the method of drying the cords for a short time and preserving them in glycerin, a living virus is used from the outset.

It may be asked why, since in the use of any vaccine safety and efficiency are the objects kept in view, and when these objects can be attained by a dead vaccine, a living one should be employed.

We know that dead bacterial vaccines are safe and efficient in producing immunity in man and animals. No one would feel justified in using living streptococcus, staphylococcus, or plague vaccine on a human subject when dead vaccine would answer the same purpose. On the other hand, we know that a living typhoid or a living cholera vaccine could be used without any risk of conveying the disease to the person inoculated; yet for obvious reasons it would be very inconvenient, and possibly risky, to use these vaccines outside the laboratory where they had been prepared, and not at all convenient and practical in the laboratory, so it is now the custom to use them only after they have been killed and standardized.

Several workers have obtained evidence of the immunizing properties of dead rabies virus. Poor,[5] recording his own experiments with rabies virus killed by heating, mentions that Fermi, as the result of his experiments, recommended the use of dead virus only, his plan being to kill the virus with carbolic acid, and store the emulsions for future use. He also mentions that Heller, in his work on protective inoculation against rabies (Jena, 1906), gave the experience of others in the use of virus killed in various ways—for example, heat and by glycerin, and his own experiments in the use of virus killed by grinding according to the methods of McFadyen.

Dead Rabies Vaccine.

Early in 1910, when Director of the Central Research Institute of India, I took up the question of the preparation of a safe and efficient antirabic vaccine. A full and detailed account of my experiments on the effects of heat and carbolic acid on various dilutions of rabies virus, the preparation of a dead antirabic vaccine by killing the virus with carbolic acid, and the animal experiments upon which the claims for safety and efficiency are based, will be found in *Scientific Memoir* No. 44.[6]

Method of Preparation.

The vaccine is prepared from the fresh brain, medulla, and spinal cords of rabbits which have died from rabies after inoculation with "fixed" rabies virus. The material is finely ground down in 8 per cent. dilutions in sterile normal saline solution to which has been added 1 per cent. carbolic acid; it is then filtered into a sterile glass receptacle through fine muslin to remove any particles of fibrous tissue which may be present, and kept at a temperature of 37° C. for twenty-four hours. At the end of this period the virus is dead; it is now diluted with an equal volume of sterile normal saline solution, filled into suitable bottles (20 c.cm. bottles), capped with rubber caps and sealed with melted paraffin wax. Aseptic technique is observed throughout. On the preparation of a "brew" two tests are carried out—one for sterility and the other by inoculating a rabbit subdurally to prove that the virus is dead.

It will be noted that this method of preparation gives a 4 per cent. dilution of dead virus in 0.5 per cent. carbolic acid normal saline solution—a dilution suitable for treatment purposes, or which could be still further diluted if considered necessary.

This vaccine retains its immunizing properties unimpaired for months, three months at least, and probably for a much longer period, when kept in a moderately cool place and not exposed to the light.

In the preparation of a dead antirabic vaccine it is necessary to choose between two practical methods of killing the virus—namely, by heat or by carbolic acid or preparations of a somewhat similar nature. Carbolic acid is the method which produces least change in the vaccine material and interferes least with its keeping properties.[7] The time required for weak solutions of carbolic acid to kill rabies virus depends on the dilution of the virus material and the temperature at which the mixtures (virus and carbolic acid) are kept.

One per cent. dilutions of rabies virus in a half per cent. carbolic acid normal saline solution remain alive and virulent for twenty days at room temperature, and are not killed in twenty-four hours at 37° C.

One per cent. dilutions of rabies virus in a one per cent. carbolic acid normal saline solution remain alive and virulent at room temperature for four days, but not for six days; whereas eight per cent. dilutions of the virus in a one per cent. carbolic normal saline solution are killed in twenty-four hours at 37° C.

The vaccine can be prepared in any well equipped bacteriological laboratory, and by any bacteriologist skilled in the technique of the preparation of bacterial vaccines. From such a laboratory it could be sent to various centres for treatment without running any risks of interfering with its efficiency, and where any medical man with a knowledge of the administration of bacterial vaccines could carry out the treatment of patients bitten by rabid animals.

In a country where rabies is prevalent the advantages of such a system in providing a safe and efficient vaccine are enormous. The expenses connected with the preparation of the vaccine and the provision of a few centres are small; long and costly journeys are avoided; and, most important of all, patients come under early treatment, and a treatment which is efficient and free from risks. Knowing that it is a dead vaccine we can dismiss any doubts as to the possibility of its producing the disease which it is intended to prevent. The proof of its efficiency has been established in India, where it has been in use since 1912.[8]

At the Pasteur Institute of India, Kasauli, between the years 1912 and 1916, a total of 22,519 persons were treated by carbolized vaccine, with 0.68 per cent. of failures. Of the 22,519 persons treated, 2,009 were Europeans, and these gave 0.19 per cent. of failures. These results must be looked upon as extremely good; they compare most favourably with the results obtained by any other method of antirabic treatment.

For a comparison of the results obtained by carbolized antirabic vaccine in India with the results obtained in European countries by other methods of treatment the statistics of Europeans in India should be taken, and for the following reasons:

1. Native patients, owing to their thin and scanty clothing, are generally more severely bitten than Europeans, and much more liable to be bitten through the bare skin.
2. Jackal bites are more common in Indians than Europeans.
3. Many of the Indian patients waste valuable time before coming for treatment, whereas Europeans come early as a rule.
4. In only a few cases is cauterization attempted when an Indian is bitten, and, when it is, hardly ever is it early and efficiently carried out.
5. Many Indian patients arrive with neglected and suppurating wounds; in Europeans this is quite the exception. In the treatment of Europeans in India as compared with Indians the factors noted are a minor drawback, and the circumstances in which they are bitten and treated are fairly comparable to what takes place in a civilized European country.

(*a*) At the Pasteur Institute, Paris, between the years 1886 and 1918 a total of 39,721 persons received antirabic treatment (dried cord system), with 0.39 per cent. failures.[9] In 1886 the failures were 0.94 per cent.; in 1887, 0.79 per cent.; in 1888, 0.55 per cent., and in 1894, 0.5 per cent. In three of the years, namely, 1908, 1912, and 1913, there were no failures, and in all the other years they were under 0.5 per cent., and in four instances under 0.2 per cent.

(*b*) At the Pasteur Institute of India, Kasauli, between the years 1912 and 1916, a total of 2,009 Europeans received antirabic treatment with carbolized antirabic vaccine, with 0.19 per cent. failures.[10]

Of these 2,009 patients, 400 were treated in 1912, with no failures; 448 in 1913, with 1 failure=0.24 per cent.; 461 in 1914, with 1 failure=0.21 per cent.; 322 in 1915, with no failures; and 378 in 1916, with 2 failures=0.52 per cent. I have not seen the Kasauli figures for 1917 and 1918, nor have I been able to procure the statistics from the Pasteur Institutes in Southern India and Burma, where carbolized vaccine is also in use, but the comparison I have drawn between the Paris and Kasauli results is quite sufficient to establish the efficiency of carbolized antirabic vaccine.

In the statistical figures of the Pasteur Institute, Paris, and of all other antirabic institutes, those who contract hydrophobia during treatment, or within a period of fifteen days of the last inoculation, are not reckoned as failures of treatment, owing to the fact that their nerve centres became invaded by the virus of the biting animal before treatment was completed and immunity established. This is the explanation given by Pasteur, and on it is based the necessity for early and efficient treatment (see Section IV).

Persons receiving antirabic treatment are inoculated daily, and for a period of from fifteen to eighteen or twenty-one days, according as to whether light, medium, or intensive treatment is considered necessary. Each case should be dealt with on its own merits. The points taken into consideration in determining a line of treatment for any given patient are: number of bites, depth and severity of bites; position of the bites—such as whether on the head, face, or neck, or through the exposed skin on any other part of the body; whether through the clothing; whether the wound was treated early and efficiently; the evidence to hand as to whether the animal which inflicted the bites was rabid; and, most important of all, the time which elapsed before the patient came for treatment.

It will be noted that a study of these points means an attempt to arrive at a conclusion as to the amount of virus implanted in the wound, the risks of infection, and the line of treatment indicated.

Antirabic treatment is now being carried out in England with carbolized antirabic vaccine prepared at the laboratories of the Ministry of Health and sent out to centres where treatment is given. Instructions accompany the vaccine giving all necessary details connected with its administration, and examples of light, medium, and intensive treatment.

XI. The Prevention of Rabies in Dogs.

As this is a veterinary subject in the hands of competent veterinary authorities of the Ministry of Agriculture and Fisheries, who may be trusted to deal with it efficiently,

I need only mention that the outstanding points connected with prevention in a country like England are:

1. Application of the muzzling order for a sufficiently long period.
2. Restriction on the movement of dogs into or from scheduled areas when muzzling is applied locally; in the event of universal muzzling being applied it would still be necessary to restrict the movement of dogs.
3. A strict quarantine for a fixed period on the importation of all dogs from abroad.

On the continent of Europe the question is more difficult on account of neighbouring countries, but in the British Isles this difficulty does not arise.

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ACUTE DIFFUSE PERITONITIS:

A SERIES OF TWENTY-ONE CONSECUTIVE CASES.

BY

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THE peritoneal cavity is one large complex bursal sac containing, in addition to several diverticula, the hollow and solid abdominal viscera. The viscera, which are retroperitoneal, possess a liberal blood supply, particularly the intestine. The main diverticula or pouches are the recto-vesical, the kidney pouches, the retro-caecal, the retro-sigmoid, the hepatico-renal, and the pouches about the termination of the duodenum.

It would naturally be surmised that in infection these pouches would form suitable places for the development of sepsis, and eventually localized abscesses, but in reality they do not. The peritoneum, however, offers a large area for the absorption of toxins, and the rate of absorption is remarkably rapid, being greater in the upper half than in the lower. The lymphatics are very numerous, and eventually form the truncus lymphaticus intestinalis, which opens directly into the receptaculum chyli.

Peritonitis is initiated by access of virulent infection into the peritoneal cavity, the organisms being usually intestinal in origin. Peritonitis may be caused either by trauma or disease.

The war has provided abundant material for the study of this grave condition, and different observations and disappointments have suggested a method of treatment which has given most encouraging results in twenty-one consecutive cases.

When infection has gained access to the peritoneal cavity the first change is one of hyperaemia of and exudation into the subperitoneal tissue of the part around the infected focus. This is followed by the exudation of a fluid, which rapidly becomes turbid, into the peritoneal cavity in the neighbourhood of the infected focus. If the fluid be examined microscopically, it will be seen to contain large healthy staining endothelial cells, a few polymorphonuclear leucocytes, also staining well, but no bacteria. This can always be demonstrated in fluid present in a case of acutely inflamed appendix which has not perforated, and for which an early operation has been performed. Further, if the fluid be allowed to stand or be centrifuged, the cellular element will sink and leave a clear supernatant straw-coloured fluid. Cultures have in some instances shown the presence of staphylococci, but it is doubtful if these organisms did not come from the skin. The fluid, differing in no way from that secreted into a large joint after penetration by a septic foreign body, is highly protective in character, and at first possesses first-rate bactericidal powers. While this fluid is being secreted Nature is making a further effort to localize the diseased focus by the formation of adhesions.

When the gut is damaged, as in a gunshot wound, there is abundant proof that peristalsis is immediately arrested, and remains in abeyance so long as it is not further stimulated. In other words, extravasation of intestinal contents will be small in extent, especially if the patient be given morphine and kept quiet. Transport over rough ground or by motor is sufficient to start peristalsis anew and so increase extravasation, whereby a larger stream of infection gains access to the peritoneal cavity. It is, then, possible, though there is no direct proof, that in acute abdominal conditions other than gunshot wounds peristalsis is arrested or modified.

Should Nature fail in her attempt to localize the inflammatory focus, and should such failure be intensified by treatment—for example, the administration of an aperient for a pain in the stomach—then infection will certainly be disseminated, either slowly or rapidly, throughout the peritoneal cavity, and no factor is more potent in bringing this about than an active peristalsis. The whole surface, especially that clothing the intestine, becomes actively hyperaemic and swollen, it loses its lustre, protection fluid is poured out, lymph of a plastic nature is deposited on the gut binding together coils of small intestine, the flanks and pelvis contain turbid fluid, and the intestine rapidly becomes distended.

The next stage is an impairment of the vitality of the fluid poured out into the peritoneal cavity. The fluid is slowly converted into pus, and this is enhanced by the increasing intra-abdominal tension brought about by an ever-distending gut, which exerts a serious brake upon the circulation in the vessels of the mesentery. The rate of destruction of the vitality of the protective fluid depends upon the degree of intra-abdominal tension, the virulency of the infection, and the patient's general resistance.

Though the fluid at this stage may often be referred to as pus, it is only partially pus; it is a question of degree, and degree in this respect is a highly important question. It is possible to gauge this degree clinically to some extent by the severity of the symptoms of toxaemia.

It seems that the presence of many plastic adhesions binding together coils of small intestine is of good omen and indicative of a high degree of resistance. At this particular stage complete resolution may take place with treatment. On the other hand, if the protective fluid dies it forms pabulum for the bacteria present, and it eventually becomes pus. Septic absorption under these conditions becomes extreme, and finally death follows from toxaemia.

There seems to be little doubt that "peristalsis plays a large part in the dissemination of septic material from any one focus throughout the peritoneal cavity."

Symptoms.

Early symptoms are due to Nature's method of coping with the disease. As soon as infection has reached the peritoneal cavity, a splint is applied in the form of a rigid abdominal muscle. There is pain and tenderness coinciding with the hyperaemic condition of the part of the peritoneum affected, and later there is a definite mass to be felt which is formed by adhesions, adherent omentum, and the diseased part of the gut. As the condition progresses the tenderness becomes more general, the whole abdominal wall is now rigid, distension sets in, and vomiting commences. Constipation is absolute, there is no passage of flatus, the urine is diminished in amount and often passed with difficulty. Vomiting increases in frequency, the patient rapidly becomes dehydrated, there is hiccough and a typical abdominal facies, the tongue is dry and coated, sordes appear on the lips and teeth, vomiting later becomes coffee-ground, the pulse steadily becomes more rapid and thready, and finally the patient dies of toxaemia.

Vomiting which increases in frequency has in the case of gunshot wounds proved to be due to an ever-increasing extravasation of intestinal contents into the peritoneal cavity. Vomiting which continues after forty-eight hours and which is biliary in character is toxic, and is Nature's attempt at excretion. Vomiting of the coffee-ground variety denotes a very grave degree of toxaemia and is of very serious import.

Nature in her attempt to make good is bound to fail unless helped artificially, as she can make no provision for the fluid lost by vomiting.

Complications.

The only complication to be feared, apart from toxaemia, localized abscesses, and the like, is intestinal obstruction. This may be a later complication, and becomes evident by a change in the character of the vomit.

Treatment.

Many authorities have advised treatment on the following lines:

(1) Removal of the cause at the earliest possible moment.
(2) Drainage of the peritoneal cavity after performing lavage or no.
(3) Abolition of the distension by means of graduated doses of calomel, subcutaneous injections of pituitrin or eserine, turpentine enemata, artificially emptying the distended bowel, and the like.
(4) Control, if possible, of the vomiting by various drugs or stomach lavage.
(5) Administration of saline, either subcutaneously or rectally, and stimulants.
(6) Suitable nourishment.

On (1) all are agreed, but this should be performed with the minimum of disturbance to the gut and the peritoneum generally.

(2) Can the peritoneal cavity be drained, and if so, what is drained away? *Post-mortem* examinations performed both during the war and before (and such examinations during war time have followed very soon after death) show that a drainage tube is shut off like any other foreign body from the general peritoneal cavity within a few hours of insertion. "The degree in which adhesions are thrown out is a very important measure of the degree of the patient's vitality."

If, then, protective adhesions are being thrown out around drainage tubes, what are we attempting to drain away? A protective fluid of first-rate vitality; in other words, we are attempting to defeat Nature. Provided a case of general peritonitis can receive surgical help early, it is quite sufficient to mop out carefully any obvious pouches in the region of the area of operation with dry sterile swabs and to abandon all forms of drainage.

Should the fluid be frankly purulent, and consequently no peritoneal reaction present in the form of adhesions or deposition of lymph, then drainage may be resorted to, but this type of case is invariably hopeless from the beginning. It is very unwise to disturb any lymph that may be deposited upon the gut or attempt to unravel coils of small intestine that are matted together, for the procedure only increases shock and opens up fresh areas for absorption. It must be remembered that matting together of the intestine reduces the area for absorption to a minimum.

No good can ensue from peritoneal lavage, for it amounts to washing away a fluid that is highly valuable at this stage, and however carefully performed it aids the spread of infection. It is quite sufficient in the way of drainage to leave a small tube or glove drain down to the primary focus of infection, to be removed at the end of forty-eight hours. This drainage, however, is not always necessary.

(3) What is the significance of a distended intestine? The gut with its serous coat is in a condition of acute inflammation. Its musculature is rendered incompetent partly as an effect of toxaemia and inflammation, partly as a result of distension with gas formed by abnormal fermentation taking place within its lumen, again the result of general toxaemia. Would one suggest to a patient, who was suffering with acute cellulitis of both legs, that he should get up and run about in order to effect a cure? Why then adopt such remedies as calomel, pituitrin, eserine and the like as a means of treating an acutely inflamed gut? Moreover, such treatment by stimulating peristalsis will further disseminate infection and increase toxaemia. There can only be one rational treatment at this stage, and that is rest. It is difficult to understand the significance of the intestinal contents at this particular juncture. They may exert some useful function, they may not. It is sufficient to say that no apparent harm has resulted from leaving them there, and consequently enterostomy and artificially emptying the distended gut has not been practised in any of this series of cases.

The only method of splinting an inflamed gut is by administering morphine and atropine; ¼ grain of the former drug is given every eight hours, and $\frac{1}{150}$ grain of the latter drug every twelve hours. The pupils must be carefully watched, and as soon as constriction shows itself the dose should be decreased to ¼ grain every twelve hours, and this is usually called for at the end of forty-eight hours. Administration of these drugs is continued until flatus is passed and the patient has ceased vomiting; over the series of cases in question this invariably occurred at the end of the fourth or fifth day. It has been suggested that the administration of morphine hinders phagocytosis. If this is true, it does not do so to such a degree, when given to the extent recommended above, as to jeopardize the patient's chances, and clinically this treatment has proved to be sound practice.

(4) Vomiting is a symptom of diffuse peritonitis, and is a method of eliminating toxin. Why devise means for checking it? The character of the vomit is important, and affords a clue to the prognosis. Thus, biliary vomiting which gradually gets clearer is of good omen. Coffee-ground vomiting denotes a more severe degree of toxaemia, and is serious. Should the nature of the vomit change from coffee-ground to the biliary type (which it did in three cases of this series), then the prognosis is good. If, on the other hand, the vomit becomes faecal, this denotes intestinal obstruction and further operation is called for. This latter complication occurred in two cases of the series and both recovered; in both cases many adhesions were present, and obstruction had occurred at the ileo-caecal junction. Vomiting at this stage is not so distressing as many would imagine, and the stomach appears to empty itself both easily and painlessly. Vomiting, then, should be encouraged.

(5) Continuous vomiting rapidly dehydrates a patient. To make good the loss of fluid and to aid in a speedy dilution of toxins normal saline is employed. This is run in slowly and continuously beneath the skin. The drip is so regulated that undue collection of fluid in the tissues round the needles is avoided. Nine to ten pints can be given in twenty-four hours; the supply at this rate is maintained for forty-eight hours. Swelling of the feet or waterlogging of the lungs must be guarded against. Should the patient be intolerant of fluid given subcutaneously it may be given continuously by the rectum, but the subcutaneous method is that recommended. At the end of forty-eight hours the patient needs less fluid, and it may be reduced to five pints in the twenty-four hours. The supply of saline should be maintained until vomiting has ceased. These patients have tolerated continuous subcutaneous saline well when under the influence of morphine.

Copious drinks of water containing sodium bicarbonate and sodium citrate are given by the mouth, and by these means two ends are attained—first, the stomach is washed out without undue distress to the patient; and secondly, a diuretic action is obtained, probably through absorption of some of the citrate not vomited. At the end of forty-eight hours the patient begins to pass large quantities of urine, and with this is associated an amelioration in symptoms, for the vomiting becomes less frequent, the vomit clearer in colour, and the patient feels better. Stimulants have not been employed.

As soon as the vomiting has ceased administration of saline is withheld. The inflammatory condition is now subsiding, but on no account should purgatives be given. Flatus is now passed, and generally an offensive liquid stool. Bismuth and compound tincture of camphor can be given with benefit as soon as the vomiting has ceased.

(6) For the first forty-eight hours no nourishment is required; saline is all that is necessary. On the third and fourth day glucose is given by the rectum. As soon as the vomiting has ceased, Brand's essence and albumen water sweetened with glucose may be given in small quantities frequently and regularly. Water may be administered freely. At the end of a week milk and soda water, raw eggs, and a little custard may be given, and from this date the diet may gradually be increased. Patients at this stage are often very hungry, but a full meal should not be allowed, as it causes distress and distension. On the tenth or twelfth day castor-oil may be given, and from this date all anxiety is usually at an end.

One case from twenty-one consecutive cases of diffuse peritonitis may be quoted here; space, unfortunately, does not permit of more.

Pte. M., 6th S.L.I., admitted to 39 Stationary Hospital on January 29th, 1919, with the diagnosis of influenza. The symptoms were persistent vomiting of a greenish material, face

sunken, looking very toxic and slightly jaundiced, abdomen not moving with respiration and legs drawn up. No passage of flatus for thirty-six hours, small quantities of high-coloured urine passed with difficulty. Maximum tenderness in right lower abdominal quadrant; a tender mass could be felt per rectum on the right side, and the recto-vesical pouch felt full. Pulse 110, thready; temperature 102.8°.

Laparatomy performed through right rectus. A gangrenous perforated appendix which was hanging into the pelvis was removed. The pelvis was full of a very offensive fluid and a concretion was found free in the fluid. Diffuse peritonitis was well established; the intestine was acutely inflamed and distended; large patches of lymph were present on the small intestine, whose coils were matted together. The pelvis was mopped dry, but the remainder of the peritoneal cavity was not touched. A small drain was left for forty-eight hours down to the bottom of the recto-vesical pouch. The abdomen was closed in three layers.

Subsequent History.—Biliary vomiting continued for three days. No passage of flatus until the third night. A very offensive liquid stool passed naturally on the fourth day. The patient developed bronchopneumonia, but the abdominal condition remained satisfactory. Distension had entirely gone at the end of the eighth day. Tube removed at the end of forty-eight hours. Despite the pneumonia the patient made a very satisfactory recovery.

Treatment.—Continuous subcutaneous saline up to the third day, copious drinks of water containing bicarbonate and citrate, glucose per rectum. Morphine gr. $\frac{1}{4}$ 8-hourly, atropine gr. $\frac{1}{150}$ 12-hourly for forty-eight hours, and discontinued after the end of the third day. No aperient until the ninth day. Very light diet up to the ninth day, when diet was gradually increased.

SUMMARY OF CASES.

Briefly the series of twenty-one cases is as follows:

The cause of the condition was due to appendix abscess in 6, perforated gastric ulcer in 1, penetrating wounds of the abdomen in 8, intestinal obstruction with gangrene of the gut in 3, intestinal obstruction with perforation of the gut in 1, pneumococcal in 2.

There was one death—a case of intestinal obstruction with gangrene of the gut. Most noticeable in this case was the absence of any healthy reaction of the peritoneum; clinically it was a very severe example of general toxaemia.

The two cases of pneumococcal peritonitis both showed symptoms of subacute intestinal obstruction. Median laparatomy was performed and the obstruction freed.

One case of appendicitis and two of penetrating abdominal wounds were associated with coffee-ground vomiting. One case of appendicitis and one of a gunshot wound developed intestinal obstruction requiring further operation. In both there was a healthy peritoneal reaction in the form of plastic adhesions and fluid, and both survived the necessary operation. One case (appendix) developed a faecal fistula which subsequently closed.

In only one of the cases was the peritoneal fluid frankly purulent, and in all but this one lymph and plastic adhesions were present. In no case was an attempt made to drain or wash the peritoneal cavity; nothing was disturbed beyond the necessary area of operation. No case proceeded to the formation of localized abscesses in the peritoneal cavity.

All (with the exception of the one death) ran almost identically the same course, in that vomiting ceased on the fourth or fifth day, and flatus was passed about this period. Distension subsided in all by the end of the tenth day; in some cases it was earlier.

The urinary outflow (a very important factor) at first diminished, increased rapidly after forty-eight hours, and with this was noticed a change in the character of the vomit and improvement in the patient's general condition.

Treatment in all cases was identical, and has already been detailed in the text. All the patients were nursed in a very slightly elevated position with a bolster placed beneath the knees.

DR. WILLIAM H. WELCH has presented to the College of Physicians of Philadelphia the first account of vaccination published in the United States. The author was Benjamin Waterhouse, the first professor of the theory and practice of medicine in the University of Harvard. He states that he had received the virus from England, and forthwith vaccinated his own children. To prove that immunity had been established he afterwards took the children to the Boston small-pox hospital, where they were inoculated with small-pox virus taken directly from a patient in the hospital. Finding that no effect followed the procedure, Waterhouse exclaimed, "One such fact is worth a thousand arguments."

FIFTEEN CASES OF LIVER ABSCESS:

AN ANALYSIS OF SYMPTOMS AND TREATMENT.

BY

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THE reports of the Medical Research Committee on the prevalence of infection with the *Entamoeba histolytica* or its cysts, not only among troops returning from Mesopotamia and the Eastern Mediterranean, but also among members of the civilian population who have never been out of England, will increase the interest taken in the complications traceable to this parasite.

Of 450 non-dysenteric soldiers in the Liverpool Tropical Hospital, Professor Warrington Yorke found that 7.8 per cent. were infected. MacAdam and Keelan, after examining over 2,000 men at Deolali, India, estimated that at least 33 per cent. of the troops returning from Mesopotamia were carriers of the entamoeba or its cysts. The men thus infected may be potential cases of dysentery or liver abscess.

In Mesopotamia cases of liver abscess were not confined to the hot season, but developed also in the winter months, when the temperature approximated to that of the English spring months.

To diagnose the first case of liver abscess seen is not easy. A well known manual of tropical diseases gives a list of between twenty and thirty signs and symptoms which may occur in this condition. The following analysis of the signs, symptoms, and treatment of fifteen cases of proved liver abscess which came under my treatment in fifteen months at Baghdad is an attempt to indicate the relative value of these signs, symptoms, and treatment, and may be of assistance to practitioners who have not had an opportunity of seeing these cases.

Analysis of Signs and Symptoms.

History of dysentery was present in 6 out of 15 cases. This is not of much value in diagnosis, as such a large proportion of the troops were carriers of entamoeba without having had any signs of dysentery.

Pyrexia was present in every case; it was continuous in 9 cases and remittent in 5. The temperature rarely rose above 102.4°. In 2 cases the pyrexia associated with the abscess formation commenced one week after the end of an attack of dysentery. In its early stages the pyrexia of liver abscess is frequently mistaken for that of malaria or enteric group. Rigors were present in 6 cases and heavy cold sweats in 12. They occurred at 9 to 10 p.m. and during the night.

Pallor was present in 12 cases, and was usually very marked. Slight jaundice was present in one case only.

Wasting was present in 14 cases. This appears to come on very rapidly when pus has formed and sweats are occurring.

Pain.—Local pain in the form of a tender spot on palpation over the liver was present in 14 cases. This fairly constant sign was useful in localizing the position of the abscess. The most common site of the tender spot was in the intercostal spaces over the liver in the axillary line. In these cases the abscess was usually found in the posterior part of the right lobe of the liver. If the tender spot was below the ribs on the right side the abscess was nearer the front of the right lobe. One patient with an abscess in the left lobe had a tender spot in the epigastrium. Referred pain was present in 8 cases, chiefly in the right shoulder. Three of the patients in whom the pain in the right shoulder was unusually severe afterwards developed lung complications involving and extending through the diaphragm. The diaphragm and the skin over the right shoulder are supplied by the fourth cervical nerve.

Increase of Liver Dullness.—Every case showed a general enlargement of the liver. In one case where the abscess was near the front of the right lobe a rounded mass could be felt below the ribs in front. At the back of the chest it was difficult to determine the upper level of dullness owing to the impaired note at the right base caused by the lung complications which were present in most cases. Examination with the fluorescent screen confirmed the enlargement of the liver.

Local bulging was present in nine cases, and when present was a valuable sign. When the bulging is lateral it is seen best by arranging the patient straight in his bed in a good light, and observing from the foot of the bed. In a few cases the bulging was forwards.

Epigastric varicosity was not present in any case.

Lung complications were present in 13 cases. In 12 they were confined to the right base and afforded a diagnostic sign of value. The signs observed were: Basal crepitations in 7 cases; basal pneumonia in 4 cases; pleuritic friction sound in 3 cases. In one case from which 5 oz. of pus had been withdrawn, an abscess (probably a second one) burst into the base of the right lung five days later. Ten ounces of brownish pus were coughed up in twenty-four hours, the expectoration became bile-stained on the third day, gradually diminished, and the patient made a good recovery.

Decubitus.—No characteristic position was observed.

Leucocytosis.—In fourteen of these cases a white blood count was made, and a polymorphonuclear leucocytosis was found in every case. The average white count was 18,600.

Rigidity of the right rectus abdominis was observed in about half the cases.

From the above analysis it will be seen that there were seven outstanding diagnostic signs present in this series:

1. General enlargement of the liver	15
2. Pyrexia continuous or remittent	15
3. Leucocytosis	14*
4. A local tender spot over the liver	14
5. Signs of irritation at base of right lung ...	13
6. Rapid wasting	14
7. Heavy sweats	12

The other signs and symptoms of value are:

Local bulging	9
Pallor	12
Rigors	6
Referred pain in right shoulder	8
Rigidity of right rectus.	

* One not examined.

Treatment.

Four of the early cases were treated by open operation and drainage by tube. Two of these were drained through incisions in the epigastrium, the exposed area of liver being packed round with gauze and the abscess opened by sinus forceps. In both these cases the *Entamoeba histolytica* was found in the discharge from the tube on the third day, although not found in the pus removed at the operation; evidently the organism was liberated during the breaking down of the abscess wall.

The other 2 cases were treated by drainage through the chest wall. After localizing the abscess by means of a glass syringe (20 c.cm.) and needle, the needle was left *in situ* and 2½ in. of the tenth rib were excised in the axillary line. The diaphragm was incised below the level of the pleura, the edges being sutured to the intercostal muscles. After packing gauze round the area of liver exposed a pair of sinus forceps was passed into the abscess cavity guided by the needle. A drainage tube was then passed into the abscess and sutured to the chest wall. One of these cases died suddenly during the night following the operation.

Pathologist's Post-mortem Report.

Dysenteric ulceration of appendix, caecum, and large intestine. One large abscess cavity in right lobe of liver drained by the tube and a second smaller one which had not been found by the exploring needle.

An *ante-mortem* clot was found in the right ventricle and commencement of the pulmonary artery.

The remaining 11 cases were all treated by aspiration with an ordinary 20 c.cm. glass syringe and needle with a fairly large bore, which was passed in various directions into the liver until the abscess was found.

I found the syringe to be more convenient than the aspirator, and the needle, being of smaller diameter, probably did less damage to the liver tissue; where pus had definitely formed I found no difficulty in withdrawing it. When the pus was found, as much as could readily be obtained was withdrawn, the syringe being detached from the needle, emptied, and used again as long as any pus could be withdrawn.

In seven of the eleven cases I injected 10 grains of quinine hydrochloride in 1 oz. of water into the abscess cavity. I do not know whether it did any good, as the four cases in which quinine was not injected did as well as the seven cases with quinine.

Personally, I think it better not to inject anything into the abscess cavity for two reasons: first, because the contents of the abscess are usually sterile, and, secondly, because a low pressure in the abscess cavity encourages the flow of lymph containing emetine.

After aspiration every patient was given a course of hypodermic injections of emetine hydrochloride, 1 grain daily for one week and then on alternate days until 12 or 14 grains had been given. Whenever possible each patient was given 1 grain of emetine a few hours before operation, so that the first serum to flush the walls of the abscess should be carrying emetine.

The action of emetine in these cases of liver abscess appears to be as specific in its action as that of quinine in malaria. In addition to the fifteen cases of proved liver abscess I saw seven or eight cases of hepatitis following dysentery, some of which were probably in an early suppurative stage and which cleared up rapidly with emetine.

There were multiple abscesses in three cases. The average quantity of pus was 8½ oz. The greatest quantity in any case was 30 oz. In colour the pus was yellow in eleven cases and grey in three cases. The classical chocolate-coloured pus was seen in one case only; it was noticed that the yellow pus rapidly became much darker when exposed to the air. The pus was found to be sterile in eight cases, to contain *Entamoebae histolytica* in three cases, staphylococcus in three cases, and *B. coli* and *B. pyocyaneus* in one case each.

Results.

Fourteen out of the fifteen cases recovered completely. One case died as already described.

In my opinion the majority of these cases can be treated successfully by aspiration with an ordinary 20 c.cm. glass serum syringe. It does not appear to be necessary even to withdraw all the pus. Once the tension in the abscess cavity is relieved, the emetine-carrying plasma can pass through the walls of the abscess cavity and exert its lethal effect on the army of amoebae present there. After aspiration the temperature usually drops to normal at once, the liver rapidly diminishes in size, and convalescence is rapid.

Open operation with a drainage tube in the liver substance—that is, one end in a constantly moving delicate organ and the other in the more or less rigid chest wall—would seem to be physiologically unsound. In the type of case met with in Mesopotamia I think that open operation can only be necessary in exceptional cases.

From what I have read of tropical abscess in India, the type met with in Mesopotamia appears to be of a more acute type, to have a more toxic effect on the patient, and to be more frequently multiple.

THE TREATMENT OF UTERINE FIBROIDS BY X RAYS.

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ALTHOUGH the value of *x* rays in the treatment of uterine fibroids has been known since 1911, principally through the writings of Professor Bordier and Professor Gauss, it does not appear to have gripped general attention; but their researches and those of many others since have placed the treatment, more especially of bleeding fibroids, on a very firm basis, and the use of *x* rays is the treatment of choice for intramural fibroids. It is very useful also in intrauterine fibroids, though the success is less marked; in subperitoneal fibroids the method is least satisfactory, though, perhaps, not quite useless.

Professor Gauss of Freiburg instituted a very drastic method in one sitting. He advocated many "points of entry" over the two ovaries and uterine tumour, from the front of the abdomen, then turning the patient on her face he administered the *x* rays through the sciatic notches and thinner portions of sacrum, the object being not to injure the skin. To this purpose he used a very heavy current,

well filtered by plates of aluminium, but with a small diaphragm, whilst the whole course of treatment was accomplished in one day, occupying several hours.

Professor Bordier of Lyons practises a less hurried method. He gives a series of cycles, each consisting of nine sittings. Thus he would give a sitting to the right ovary, one to the left ovary, and one centrally over the uterus. This is repeated three times, making nine exhibitions of *x* rays to the uterus and appendages. These exhibitions may be arranged according to the convenience of the patient; two may be given on the same day, or one may be given on alternate days. In an average case there is after the first cycle of nine exhibitions a slight increase of the flow of blood at the next period.

Twenty-one days after the first cycle a second is given, and when the next period is occurring the haemorrhage is usually less. A third and then fourth "cycle" is given, and by this time there is usually distinct lessening of the size of the tumour, and the periods have ceased. In many cases, the menopause having been established, flushing of the face with faint feelings often occur, as is usual. It is seldom that the cycles need be persisted in after the sixth.

Dr. Bordier himself urges that this treatment should never be made use of to determine the diagnosis, which should be made by every means first; and the cycle treatment should be used for fibromyomata only, and perhaps haemorrhagic metritis.

For ordinary cases in England, where this treatment can be followed out with no excessive fatigue or expense, the "cycle" treatment is convenient, but it is well to remember that there is great latitude in the mode of administration.

A series of four cases was published in the *Archives of the Roentgen Ray* by myself in 1914. I have now a further series of eighteen cases which seem to emphasize the value of the treatment which renders unnecessary a serious and mutilating operation.

On looking over the notes of my cases I found them so much alike that I propose to record only one or two typical cases.

CASE I.

A lady, aged 49, was referred to me for uterine myoma, reaching half-way to the umbilicus with outgrowths, one of which pressed on the rectum. The patient was a person of education, a church organist, who much wished to be able to carry on her work. She found herself growing weaker and weaker and had symptoms of obstruction of the bowels. The surgeon under whose care she was proposed colotomy, finding the rectum so obstructed by fibroid outgrowths, but it was determined before operating to give the *x* rays a trial. Owing to the urgency of the symptoms the rays were not administered in the usual three places only, for some of the sittings were given from either side of the sacrum. At the third cycle she expressed herself as feeling much better and relieved of the symptoms of obstruction. This patient had seven cycles, and although examined many times no growths could be felt. She was reported two years later as feeling quite well and able to carry out her duties as organist.

Apart from relief of urgent symptoms such as obstruction of the bowels, almost every patient expresses herself as feeling better. This is difficult to explain, but at least seems to show that *x* rays given in therapeutic doses do no harm to the general system.

CASE II.

Mrs. L. C., aged 47, was a case of uterine myoma in which haemorrhage was a marked feature. A hard mass could be felt in the uterus on vaginal examination, and was palpable also above the pubes. During the second cycle the patient found that the haemorrhage had ceased. During the third cycle she was examined by the surgeon who had referred her to me. He reported that the mass in the anterior part of the uterus was scarcely palpable. During the fourth cycle the lump had shrunk notably. She also complained of "flushes and fumes," and said she was getting stout and fat. When she was discharged cured after the sixth cycle it was noted that the lump could not be felt above the pubes, and there was only a little tenderness on deep pressure. Menstruation had not returned.

It seems, therefore, that we have a means of hastening the climacteric period with the usual symptoms of that period. As it has been found intramural fibromata sometimes ceased to trouble after the climacteric cessation of menstruation, so with this artificial establishment of the menopause such fibromyomata shrink and cease to bleed. The nearer the patient is to the natural climacteric period, the more successful is this form of treatment and the speedier.

In young subjects time should not be wasted on a bleeding myoma. Operative surgery is the right course. At the Brighton meeting of the British Medical Association I asked Professor Gauss whether in procuring such a rapid absorption of material he had observed any toxic symptoms, for such certainly do occur in splenomegaly; but he said he had not.

Two contraindications only of this form of treatment need be considered. It is not applicable to women below the age of 30 or 35, nor to those who have the subperitoneal form of myoma.

This treatment has one other advantage, for a rest of twenty-one days is advisable between the cycles, and during this period the patient's family doctor can watch the case and attend to her general health.

The eighteen cases may be epitomized as follows:

1. Mrs. A. D., 45. Small intramural myoma, barely palpable suprapubically. After five cycles it became no longer palpable. Discharged cured.
2. Mrs. H. C., 49. Large myoma reaching to umbilicus. Received six cycles, when, tumour having shrunk slightly, hysterectomy was carried out successfully.
3. Mrs. E. B., 34. Small myoma discovered during parturition. Haemorrhagic type. Tumour much shrunk, haemorrhage ceased; discharged after five cycles cured.
4. Mrs. A. S., 49. Uterine myomata reaching half-way to umbilicus. Case reported above. Ending in cure after seven cycles.
5. Mrs. M. B., 38. Uterine myoma, haemorrhagic type. After seven cycles was discharged cured.
6. Mrs. L. C., 47. Uterine myoma, haemorrhagic type, reported above. After six cycles was discharged cured.
7. Mrs. E. T., 46. Intramural myoma, haemorrhagic type. Haemorrhage ceased after three cycles. After four cycles was discharged cured.
8. Mrs. S. D., 56. Large, broad, hard swelling, haemorrhagic type. Swelling occupied the whole of lower half of abdomen. Haemorrhage ceased after two cycles. Patient looked and felt better, but tumour did not shrink materially, and the haemorrhage not having recurred, was, after six cycles, discharged benefited.
9. Mrs. E. H., 42. Uterine myoma, reaching half-way to umbilicus. Haemorrhage slight. After three cycles shrinking occurred, and was barely palpable after six cycles above pubes. Was then discharged cured.
10. Mrs. A. C., 50. Large haemorrhagic myoma, round in shape, barely reaching lower edge of umbilicus. At the end of three cycles haemorrhage much reduced and tumour shrunk to one inch below the umbilicus. At the end of six cycles further shrinking was reported to two-thirds between umbilicus and pubes. She was discharged much benefited and haemorrhage ceased.
11. Mrs. E. H., 48. Myoma, haemorrhagic type. Much lessened in amount after two cycles, and ceased after four. After six she ceased attendance, saying she was cured.
12. Mrs. C. C., 42. Myoma central, and palpable above pubes. This latter ceased after the second cycle. She was persuaded to continue the treatment to the fourth cycle, when she was discharged cured.
13. Mrs. E. T., 40. Precisely similar case to No. 12. Received six cycles, but the monthly periods became normal in quantity and remained so. She was discharged cured.
14. Mrs. C. M., 40. Sent as a case of fibroid enlargement of uterus. It may have been a case of haemorrhagic metritis. She had been curetted twice, with very slight improvement. Received three cycles, when, feeling and appearing quite well, she discharged herself as cured.
15. Mrs. S. S., 33. Small myoma with anteverted uterus. Haemorrhagic type. This ceased during the second cycle. She received three cycles, when she was discharged cured.
16. Mrs. B. W., 37. Sent for fibromyoma extending to one inch below umbilicus. After seven cycles slight fullness just above pubes alone remains, felt only on deep pressure. Discharged cured.
17. Mrs. M. W., 53. Fibromyoma, haemorrhagic type. Besides outlying lumps, the uterus itself reaches to two inches above umbilicus. After the second cycle, haemorrhage and also menstruation ceased. At the fourth cycle the central lump extended nearly to umbilicus. She received seven cycles, when the central lump retired to pubes. The outlying lumps remained, but lower in abdomen.
18. Mrs. L. B., 55. Myoma, haemorrhagic type. Haemorrhage ceased during first cycle, and did not again recur. After four cycles uterus shrank to pubes. Received six cycles, when the menopause seemed established and flushings were frequent. She was discharged cured.

These eighteen cases—making, with the four I have already reported, twenty-two cases—do not exhaust my list, but they will suffice to draw attention to this mode of treatment, which should be widely known amongst the great body of general practitioners, for they can instruct their family patients, who would gladly undergo such

treatment, even if rather prolonged, in preference to a formidable operation from which they would naturally shrink.

Several of the cases are of three and four years' standing, yet none of those discharged cured have returned, and a few have written letters saying how well they still feel.

THE WORK OF A VENEREAL DISEASE CLINIC.

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In October, 1918, I published in the JOURNAL a short account of the first 500 cases attending the King Edward VII Hospital Clinic at Cardiff. I have now analysed a further 1,000 cases, and the figures may be of interest as showing the source of infection in 1,500 consecutive male patients.

	Prostitutes.	Amateurs.	Others.
First 500	279	183	38
Next 1,000	481	328	191
Totals	760	511	229

The amateur infections thus show an increased percentage in the last few months and the "other sources" a marked increase. Out of the 191 "other source" cases, 71 men definitely blame their wives, the bulk of the remainder denying connexion or being uncertain as to which of more than one woman infected them.

Some hundreds of the cases have recently been discharged from the services while suffering from, or having recently suffered from, venereal disease, and a very large percentage of these were infected in French licensed houses.

The "salvarsan substitute" used during the last twelve months has been novarsenobillon, given concentrated and always intravenously. I have seen no ill effect of any sort in the last 5,000 injections. Intramuscular injections of mercury have been little used, the bulk of the patients being colliers; as they work in a cramped position, these injections caused inconvenience.

The clinics have suffered from overcrowding, 80 or 90 cases sometimes attending at a time, and as all train fares are refunded, men attend from a large area.

I should like to add two facts which have struck me:

1. The small number of men infected while drunk. This is possibly owing to the difficulty of obtaining drink, but it rather does away with the argument that without drink few men would be infected.

2. The hopelessness of expecting men to take any preventive measures after running the risk. As I stated in my previous note, in two brigades in which every facility was provided no one availed himself of them. Since then, out of some hundreds of soldiers reporting at a certain dépôt, with venereal disease contracted in every theatre of war, I did not find one man who had used the appliances provided. In this civilian clinic, too, I do not recollect more than two or three men who had taken any precaution, and I have had one man on the books three times for separate infections.

As the bulk of the male population has served in the forces, it will apparently be the case that men who would take no trouble in units away from their homes, will surely not bring suspicion on themselves by visiting the suggested disinfecting stations in their own localities.

THE first congress of the association of French-speaking gynaecologists and obstetricians will be held at Brussels on September 25th, 26th, and 27th. The following subjects are proposed for discussion: Biological diagnosis of gestation, indications and technique of hysterectomy in the treatment of suppuration of the adnexa, early getting up of women after confinement and operation, operative treatment of cancer of uterus, the value of different incisions in laparotomy, gynaecology and obstetrics, protection of pregnant women and wet-nurses.

A CASE OF PRIMARY SARCOMA OF THE LIVER.

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THE following case is interesting on account of its rarity.

History.

A man, aged 42, was admitted to the hospital in a condition of advanced emaciation. He stated that his health had been good until about a year previous, when he began to feel pain in the stomach about half an hour after food, and had a constant sense of discomfort during the intervals between meals. Flatulence was a prominent feature, but there had never been any vomiting. There was no noteworthy constipation. There had been a steady progressive loss of weight.

Condition on Examination.

The abdomen was distended by a large smooth solid tumour, extending from the costal margin to the brim of the pelvis; at its lower edge a distinct fissure could be felt in the middle line. There was some bronchial catarrh, with a persistent irritating cough. The urine was normal. A blood count showed only a slight secondary anaemia (red cells, 4,000,000; haemoglobin, 70 per cent.), total white cells, 10,000, and differential white count normal. A Wassermann test was negative. The patient gradually sank, and died on the fourth day after admission.

Post-mortem Examination.

The body was greatly emaciated. There were no signs of injury, discoloration, jaundice, or external growth. The most noticeable feature was a bulging forwards of the upper part of the anterior abdominal wall. No enlarged subcutaneous veins were visible.

On opening the abdomen the liver was seen to have a mottled appearance and to be greatly enlarged, extending on both sides as low down as the iliac crests. The surface of the liver presented a large number of greyish-white areas of new growth, some of which were about the size of a pea, while others were larger, umbilicated, and slightly raised above the surface. The general "mottling" appeared to be due to the coalescence of these nodules, forming large greyish patches which were little, if at all, raised above the surface.

The great omentum was spread out and appeared to be normal. In the gastro-hepatic omentum, and in the mesentery, slightly enlarged lymphatic glands could be felt, and those about the head of the pancreas were particularly large and matted together. There was only a small amount of clear fluid in the abdomen. The stomach, pancreas, intestines, kidneys, and suprarenal bodies were thoroughly scrutinized, but nothing abnormal was found. The liver was easily removed from the body, being quite free from adhesions, and was found to weigh 14½ lb. and to measure 23 in. in transverse diameter. The gall bladder and bile ducts were free from growth.

The lungs showed numerous small whitish patches scattered over the surface. These were almost uniform in size, none of them being larger than a sago grain. The lungs were free from adhesions, and there was no effusion into the pleural cavity. The mediastinal glands were slightly enlarged. The heart and pericardium were normal. The head was not allowed to be examined.

Morbid Anatomy.

When the liver was incised no abscess or cystic growth could be found. The left lobe consisted almost entirely of a firm whitish growth, with the exception of a small seam of liver tissue running across the surface near the lower anterior border. The growth extended to the right beyond the middle line, and formed the greater part of the substance of the upper and anterior portions of the right lobe, penetrating backwards to within two inches of the posterior surface. Small nodules, separate from the main growth, were scattered about in the remainder of the liver substance. The liver tissue was friable, and pale and fatty in appearance.

Pieces of the liver and of the lungs and some of the enlarged lymphatic glands were excised, fixed and hardened in 10 per cent. formalin, and sections cut and stained in the usual way with haematoxylin and eosin. On microscopical examination the growths from each of the above tissues were found to present the same histological features, and the following description applies to the appearance of the sections made from the liver.

Histological Characters.

Microscopically the growth was seen to exhibit an alveolar structure—strands of fibrous tissue forming alveoli which enclosed groups or clusters of cells. The fibrous strands varied considerably in thickness, some consisting merely of a few fibres, while others formed well marked bundles. The cells enclosed within the alveoli showed great diversity in size, shape, and numbers. In most of the alveoli the predominating cell was rounded or polygonal, with abundant cytoplasm and a deeply staining round nucleus. Other alveoli showed a preponderance of small round cells with scanty cytoplasm.

A number of spindle-shaped cells could also be seen in most of the alveoli, mixed with the above types of cell. No fibrous tissue was observed between the cells which formed the clusters.

The blood vessels were rather scanty, ill formed and of a capillary type, and haemorrhages were present. The liver cells adjoining the margins of the tumour showed signs of degeneration. They stained badly, were granular, some were irregular and broken, and their nuclei were difficult to discern or altogether absent. Scattered among the liver cells in this region were numerous dark pigment granules and many well stained cells similar to those found in the tumour. These cells appeared to have advanced from the main growth along the blood channels; in fact, some of the vessels in cross section were seen to be packed with them.

The growth under consideration was undoubtedly malignant, and in view of the facts, first, that no evidence of a growth could be found, after a most careful search, in any of the other abdominal organs, and, secondly, of the enormous size of the growth in the liver, it may reasonably be inferred that the tumour was a *primary* growth in the liver. It is, of course, known that very large tumours in the liver may be secondary to quite small growths in other organs, but here, as already stated, no such growth could be found.

The determination of the precise nature of many malignant tumours of the liver is frequently difficult. In the present case, however, all who examined the sections of the growth were agreed that the microscopical characters were those of a mixed-cell sarcoma of an alveolar type.

Primary sarcoma of the liver is a decidedly rare growth, as the following brief summary of the literature shows. Hale-White, in 1890, recorded the fact that not a single case was met with at Guy's Hospital during the twenty years 1870–1889, both inclusive. Byrom Bramwell and Leith, in 1897, were only able to collect 25 cases, and they concluded that few of these could be regarded as true examples. Vecchi and Guerrini critically examined 45 published cases and accepted only 21 as being undoubtedly primary sarcoma of the liver. Pepere also tabulated a list of 45 cases, and Rolleston collected 32 cases in adults.

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THE OCCURRENCE OF CLUBBED FINGERS IN HEALTHY PERSONS AS A FAMILIAL PECULIARITY.

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Clubbing of the fingers is so well known as an acquired pathological condition, especially in connexion with disease of the thoracic viscera, that its occasional occurrence in healthy persons as a familial (and doubtless also congenital) peculiarity deserves some attention. I regard the following cases as having a peculiar interest from the life assurance aspect.

In the present year I had to examine two (twin) brothers, aged 25 years, for appointments and for life assurance. Both of them showed clubbing of the fingers in both hands. The toes were not affected in the same way. In one of them (A. M. K.) the thorax was not very well developed, but the peculiarity in the fingers was slightly less marked in him than in his rather better developed brother (W. H. K.). Both of them appeared free from any visceral disease. A. M. K. had been severely wounded in the left leg during the war, but had quite recovered (from the life assurance point of view). I regarded both lives as suitable for insurance at ordinary rates. An elder brother, aged 30 years, had the same peculiarity of the fingers I was informed, but I did not myself see him. They had no other brothers and no sisters. I am not aware if the father (who died at the age of about 56 years) had clubbing of the fingers, but the mother (still living) had not.

In November, 1918, I examined an apparently healthy young Irishman (M. J. R.), aged 25 years. The only special point to be noted in regard to his condition was that he had incurved nails, with clubbing of the *fingers and toes*, on both sides of the body. This he said he had had ever since he could remember. It was an inherited peculiarity, not associated with any thoracic or other disease. His father and three of his brothers and one of his sisters were said all to show the same abnormality—at least as far as the fingers were concerned. It may be observed that Mr. M. J. R. had been accepted in 1909 and 1911 for life assurance at ordinary rates.

There is one published record of a familial peculiarity apparently of the same kind. Von Eiselsberg,[1] in 1911, described a congenital and familial condition of the terminal phalanges in a man aged 35 years, resembling clubbed fingers in appearance. One of his grandfathers, one uncle, and one sister were known to show the same condition, which von Eiselsberg suggested might be of "lymphangiomatous nature."

I would rather not use the term "lymphangiomatous" for such cases, but would suggest that some of the isolated cases of clubbing of fingers for which no cause can be ascertained may be of the same nature, even when a history of familial occurrence of the abnormality is not forthcoming. As far back as August, 1897, I met with a man, aged 46 years, who had had typical clubbing of all his fingers—not his toes—ever since he could remember. I found no cause for the clubbing. He had psoriasis, but it was of more recent date than the clubbing.[2] S. West[3] mentioned the case of a woman, aged 50 years, who came under treatment because she had swallowed some ammonia by mistake. Both her fingers and toes were clubbed. No cause could be found for the clubbing, which was supposed to have commenced three to four weeks previously. If this really was so the case could hardly be placed under the present category. West likewise recorded clubbing of fingers and toes in an otherwise apparently healthy medical man aged 38 years. In a third case of clubbing he could also find no cause.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

OSSIFYING SARCOMA OF VASTUS EXTERNUS.

A. W., aged 14, when first seen on March 9th, 1918, stated that for six weeks he had had stiffness and almost continuous pain in the right thigh. About a week later he noticed a small swelling just above the middle of the thigh on the outer side, which grew rapidly. There was no history of injury. He was a fine, well set-up lad; he walked with the aid of a stick, keeping the right knee slightly flexed and the heel off the ground. There was a pyriform swelling just above the middle of the thigh on its antero-lateral aspect. It was 4 in. or 5 in. long and nearly 3 in. across its upper pole, tapering downwards. The skin over the tumour was somewhat discoloured, but was not fixed at any part. The tumour itself could be moved freely on the bone. No fluctuation could be made out. There was no enlargement of the inguinal glands, and palpation of the abdomen did not reveal any swelling therein. The heart and lungs, and the urine were normal. A diagnosis of sarcoma of muscle was made. Dr. J. N. Collins operated on March 21st; a short incision was made over the tumour, and some muscle fibres had to be divided before the bony nature of the growth was disclosed. It was decided to amputate the limb. Disarticulation at the hip-joint by the anterior racket method was performed. There was little bleeding, and the patient stood the operation well. The recovery was uneventful. Three days after the operation injections of Coley's fluid were commenced and continued for six weeks; the patient then left the hospital in good condition and with the wound practically healed.

The tumour was situated in the vastus externus muscle, and appeared to be limited to it, there being a definite layer of degenerated muscle fibres over it. The deep surface was smooth and somewhat flattened. On sawing through the tumour longitudinally it was seen to be composed of cancellous bony substance, with a fairly definite outline except at its upper and lower poles, where it was

softer, and seemed to merge into the surrounding muscle tissue. The muscle fibres in these regions were swollen and had a hyaline appearance. In the substance of the tumour were numerous cavities of irregular shapes and varying size, the largest being in the centre. They contained thick, viscid, dark-red mucoid material, evidently altered blood.

Mr. Lawford Knaggs, F.R.C.S., who kindly examined a microscopic section prepared from a piece of the growth near its upper pole, states that it "shows that there has been a new formation of bone from a connective tissue matrix. The bone is not in lamellae. Much of the muscle tissue has been removed, and its place taken by organizing connective tissue going on to bone formation. The tumour has evidently undergone myxoematous degeneration, hence the ragged open spaces. There are occasional well-marked spindle cells to be seen containing large nuclei, also myeloplaques, such as we see in bone marrow. The picture is that of an ossifying sarcoma."

I saw the patient last on June 7th, looking perfectly well. There have been no signs of recurrence.

I wish to express my thanks to Dr. Collins for allowing me to record the case.

Peterborough. K. C. JAIDKA, M.R.C.S.

PRIMARY CARCINOMA OF THE OVARY AT THE AGE OF 11.

THE following case presents features so unusual that it seems worthy of record: In March, 1919, I was asked by Captain B. A. W. Stone, M.B., R.A.M.C.(T.F.), to see in consultation a girl, aged 11, on account of an abdominal tumour recently discovered. It seems that the child was noticed by its mother to be apparently putting on flesh and getting stouter; this was considered to be a good sign, as she had been always somewhat delicate, and quite by chance Captain Stone, who happened to be attending another member of the family, examined the child.

She was pale but not at all wasted, and the general condition was good. The greater portion of the abdomen was found to be occupied by a large, slightly irregular, but smooth solid tumour, freely movable, and apparently arising from the pelvis. The tumour reached from the margin of the ribs in the left hypochondrium to the pubes. It was not tender nor did it give rise to any discomfort. No free fluid was made out to be present in the abdomen. Examination under an anaesthetic confirmed these observations. The child is one of five children, all normal and healthy. There is no history of malignant disease in the family on either the father's or the mother's side. Twelve months previously, however, a sudden increase in size of the breasts was noticed; it persisted for a time, and the normal character was then resumed. Careful examination of the child's chest revealed no abnormality at this time.

A provisional diagnosis of a teratoma of the ovary was made and operation advised. A few days subsequently, and shortly before operation, the child had irregular temperature, reaching as high as 101° F. Examination of the urine showed nothing abnormal.

On March 18th (anaesthetic C.E. mixture) the abdomen was opened by long median incision; a large solid tumour, smooth and slightly irregular but of generally rounded contour with very vascular pedicle, was found to be occupying the position of the left ovary. No adhesions were present, and its removal was unattended with any difficulty. No other abnormal condition was found, and the right ovary and the uterus were normal. No enlarged lymphatic glands were noticed. On incising the tumour it was found to be an encapsuled soft solid, and the pathological report showed the presence of carcinoma cells in a scanty stroma. The tumour weighed 2 lb. 14 oz., and was about 8 inches in its long diameter. It was presented to the Museum of the Royal College of Surgeons and accepted by Professor S. G. Shattock, who has reported upon it in the following terms:

> It is remarkably uniform in structure, and presents no evidence whatever of being of a mixed or teratomatous kind. It is a carcinoma of spheroidal cells, mostly vacuolated and of conspicuous size in consequence. The stroma is infiltrated with lymphocytes.

The after-progress of the patient was uneventful; a rise of temperature to 104° F. the night after the operation being the only unfavourable symptom. The child is in good health six months after the operation, and there is no evidence of any further spread of the disease.

C. A. S. RIDOUT, M.S., F.R.C.S.,
Major R.A.M.C.(T.F.); Assistant Surgeon to the Royal Portsmouth Hospital.

BILHARZIASIS IN NATAL.

THE value of rest in the treatment of cystitis has long been recognized, and many cases of bilharziasis in South Africa have seemed to respond to medical treatment only when the patients have been resting in bed. It is difficult to see what influence bodily rest can have on the bilharzia parasites themselves, but there is no doubt that the symptoms of the disease are aggravated by excessive exertion, and the inflammation of the bladder wall, with the associated bacilluria, are materially affected by complete rest in bed.

Recently fatal cases of bilharziasis have occurred in South Africa, where the patients have died from the accumulation of numerous spine-pointed ova in the lungs and brain. In one of the cases the patient was being treated for phthisis, and the expectoration of a large mass of ova just before death was the first indication of the real cause of his condition. Some recent experiments by the Japanese indicate that the ova have a definite tendency to escape from the body more than that of other foreign substances, and the expectoration of the mass of ova indicates Nature's effort to afford exit for the eggs in the sputum. These fatal cases show that these parasitic affections are more serious than is commonly supposed in affected areas, and emphasize the need of destroying the parasites in the blood stream as well as preventing the accumulation of the eggs in the kidney and other parts of the body. In some instances the subsidence of the associated inflammation, following rest and urinary sedatives, is accompanied by the passage of renal calculi.

It is not uncommon to hear of the disease disappearing during an attack of enteric, and a patient of mine has reported almost complete disappearance of haematuria and renal colic following an attack of influenza. Several recently reported cures have also taken place during an attack of influenza. It is probable that the enteric and influenza toxaemia are lethal to the bilharzia worm.

I have heard patients undergoing the tartar emetic treatment state that their urine has been free from blood for the first time for two years. A married man reports that his urine had "never been clear for a day since seven years old; but now clear of blood for four days." Such testimonies indicate the efficacy of intravenous treatment by tartar emetic. However, I have noticed that the haematuria recurs when only small doses have been given and the patient refuses further treatment.

In private practice I have given up other forms of intravenous treatment in favour of that recommended by Dr. Christopherson (see BRITISH MEDICAL JOURNAL, December 14th, 1918), and use only a small hypodermic syringe and needle, inserted twice if necessary, for the larger doses. The solution must be made up fresh before each injection and suitable aseptic precautions adopted. With the antimonium tartrate solution one is sure to come across a rather sore arm sooner or later, and I always advise a patient to keep the seat of injection cold and damp for the first twenty-four hours after injection. So far I have not encountered any general symptoms from intravenous injections up to 2 grains of tartar emetic. Intramuscular injection of collosol antimonium, 1 c.cm. and 2 c.cm., cause little local reaction but a certain amount of general malaise lasting forty-eight hours, during which time the patients are best in bed.

Durban. F. G. CAWSTON, M.D.Cantab.

DOUBLE DISLOCATION.

ON August 31st I was called to see a boy, aged 12, who had fallen from a swing. The seat of the swing was 4 ft. from the ground and a rope was hanging from the seat. On getting off the swing the boy caught his feet in this rope and fell on his hands and dislocated both his elbows backwards.

I am recording this as I believe it is a rare accident to get a double dislocation. I reduced the dislocations by putting a roller bandage in the bend of the elbow and bending the forearm on it.

Bishops Waltham. P. VERNON DODD, M.A., M.D.

Reviews.

THE PITUITARY.

DR. BLAIR BELL'S beautifully illustrated monograph, *The Pituitary*,[1] presents in a convenient form a useful and complete summary of what is known about the pituitary, and contains, in addition, a surprising amount of personal observations and experimental work. The latter was begun in 1906 in order to throw light on the relation of the gland to the female genital functions and to determine the physiological and therapeutical importance of its extracts, but was subsequently much extended in its scope. The term "hypophysis," used by some authors as synonymous with the pituitary as a whole, should be applied only to the anterior lobe and the pars intermedia or the parts derived from the buccal ectoderm. As no extract is made solely from these portions, the term "hypophysis" is, strictly speaking, erroneous.

The first part of the volume is devoted to the morphology of the gland, and is illustrated by sixty figures, mainly of the histological appearances in various animals. The puzzling microscopical details of the gland have attracted much investigation; in the pars anterior there are chromophil cells, some eosinophil, others basophil, and chromophobe cells tinged very lightly with basic dyes; some authorities consider that the three different types of cells have different functions, but the author's observations lead him to support the view that the apparently different types really represent the same cells in different stages of activity. He believes that the secretion of the pars intermedia and of the posterior lobe is taken up by the blood stream, and he disputes the hypothesis of Herring and the observations of Cushing and Goetsch to the effect that the secretion is discharged direct into the third ventricle and so into the cerebro-spinal fluid. In 1907, when investigating the effect of infundibulin on the uterus, Dr. Blair Bell found that it had a remarkable pressor effect on the smooth muscle of the alimentary canal, and since 1909 it has been much used to prevent and relieve the acute paralytic distension sometimes seen after operations; the contraindications to its use are cardiac affections, renal disease with high blood pressure, and intestinal suture.

In the second part of the monograph a full account is given of the author's experimental operations on the pituitary, and the results of the various forms of excision are compared with those obtained by Paulesco and Cushing. In many respects his results confirm theirs, but he was unable to verify the occurrence of "cachexia hypophyseopriva," regarded by Cushing as characteristic of complete, or almost complete, absence of the secretion of the pars anterior; and whereas Cushing found that partial removal of the pars anterior caused dystrophia adiposo genitalis, Dr. Blair Bell failed to produce this except by compression and separation of the infundibular stalk. The explanation of this discrepancy appears to be that though dystrophia adiposo genitalis is primarily due to insufficiency of the pars anterior, the only certain way of effecting this is to interfere with its blood supply. Dr. Blair Bell believes that the pituitary should be regarded as one organ and not as two, the secretory cells of the posterior lobe—the cells of the pars intermedia—being derived from the same source as those of the pars anterior. The removal of the pars posterior does not cause any symptoms, but its functional activity is regarded as dependent on that of the pars anterior.

The inter-relations between the pituitary and other ductless glands as illustrated by removal of the pituitary on the one hand, or of the thyroid, adrenals, or ovaries on the other, are considered, and a number of the author's experiments are described; he differs from Herring in finding that thyroidectomy is followed by definite changes in the pars anterior of the pituitary, but the evidence of increased activity is not found in all three parts of the pituitary at the same time; partial or complete removal of the pituitary, however, does not produce any definite alteration in the thyroid. In connexion with this difficult subject of the inter-relations of the ductless glands, the suggestion is thrown out that the reason why physiologically active secretions of various organs, such as the ovary, the adrenal cortex, and the anterior lobe of the pituitary, have not been obtained and utilized therapeutically is because they do not produce their effects single-handed: they must either be activated by or combined with some other substance, as they are normally in the body, before they can give effect to any properties they may possess.

The symptoms of acromegaly primarily depend on an excessive secretion of the eosinophil or the active chromophobe cells of the anterior lobe (hyperhypophysism), but glycosuria may be due to interference with the function of the posterior lobe. Acromegaly produces a tendency to masculinity in women and to calcium retention, an essentially masculine characteristic. Hypopituitarism is clearly described and the surgical treatment fully dealt with. The last section of the work contains a wisely cautious account of the therapeutic uses of the pituitary extracts; much of the efficacy of continued pituitary medication appears to be due to the effect of infundibulin, and possibly of extract of the pars anterior, on calcium metabolism.

This monograph deserves the highest praise as a record of honest research and will be of immense use as a convenient source of reference, for it also contains the literature of the subject and is clearly written. It is a much easier book to read and obtain information from than is Cushing's monograph on *The Pituitary Body and its Disorders*, published in 1912, with which comparison is inevitable.

[1] *The Pituitary.* A Study of the Morphology, Physiology, Pathology, and Surgical Treatment of the Pituitary, together with an Account of the Therapeutic Uses of the Extracts made from this Organ. By W. Blair Bell. London: Baillière, Tindall, and Cox. 1919. (Roy. 8vo, pp. 348; 190 figures. 30s. net.)

THE NERVOUS CHILD.

IN *The Nervous Child*[2] Dr. CAMERON makes a simple and thoughtful contribution to the study of disease in children which will commend itself to the general practitioner no less than to those consultants whose special province includes this subject. In general practice a man is often conscious of the baffling effects which nursery management has upon the treatment of sick children. Dr. Cameron gives a clear account, with numerous examples from his own experience, of both the working of suggestion and its end-results in the production of familiar ailments by the misguided care of parents and nurses.

The chapter on observation in the nursery is full of firsthand child-lore; for example:

> The devices by which children will attract to themselves the attention of their elders, and which, if successful, are repeated with an almost insane persistence, take on the most varied forms. Sometimes the child persistently makes use of an expression or asks questions which produce a pleasant stir of shocked surprise and renewed reproofs and expostulations. One little boy shouted the word "stomachs!" with unwearied persistence for many weeks together.

What observer of his own or other people's children does not recognize this characteristic, which is capable of being unwisely magnified into a strife of wills with dire results?

The chapters on "Want of appetite and indigestion," "Want of sleep," "Other signs of neurosis," and "Enuresis," will perhaps most of all appeal to the thoughtful practitioner who has often not quite succeeded in analysing the faulty "atmosphere" of which he is conscious with sufficient clarity to give the advice he would desire. There are, of course, certain dangers in following too closely the advice to seek a functional explanation for most of the ailments of the nervous child. For instance, the mother of the nervous child is often the nervous mother; and an over-solemn lecture upon psychology and suggestion from a doctor of very serious habit may cause the mother such nervousness as to do her child more harm than good. Against the other and more obvious danger the author himself warns his readers, as, for example, under "Unexplained pyrexia":

> That in nervous children the temperature may be very considerably elevated without our being able to detect much that is amiss does not of course make it any the less necessary to be careful to exclude organic disease. Pyelitis, tuberculosis, and latent otitis media occur with nervous children as with others, and must not be overlooked.

The quiet sanity of Dr. Cameron's criticisms of German psychology in the chapter on education in sexual

[2] *The Nervous Child.* By Hector Charles Cameron, M.A., M.D. Cantab., F.R.C.P.Lond., Physician to Guy's Hospital and Physician in charge of the Children's Department, Guy's Hospital. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, Warwick Square, E.C. (Oxford Medical Publications). (Pp. 190+14. 6s.)

matters is characteristic of his treatment of the subject; and his continued refusal to see a whirlwind in every puff of air is well exemplified in the chapter on "Air swallowing, thigh rubbing, thumb sucking."

The Nervous Child is most readably written, free from the technicalities of psychologists and (except for the rather frequent appeal to "environment") of the child theorist; observation of real live children is shown in every page. The type is excellent and there is a good index. It is a book that once read will often be re-read as well as used for definite reference; a book to stimulate thought rather than to lay down rules, to add to the interest of the daily work, and to steady patience with the often difficult mothers of difficult children. To the doctor with the "better-class" practice the book will be most helpful; from it the experienced will find his observations crystallize, whilst he who is young in the gathering of observations will gather the better for what he reads therein. The practitioner who has to do with school children, with mother-craft and the like, will find it of absorbing interest.

MODERN METHODS OF EXAMINING THE HEART.

OUR attention has recently been drawn to a book by Dr. J. DE MEYER of Brussels,[3] describing modern methods for examining the heart and vessels, published in 1914 just before the war. The various instruments that have been employed are carefully described without undue or wearisome detail, the principles on which they depend are set forth, and the facts their use has elicited are recounted, while their limitations and margin of error are critically examined. The book does not aim at establishing new theories or promulgating the individual opinions of the author; indeed, all the tracings given are reproduced from the works of other authors given in the bibliography at the end of the volume; but it does aim at presenting in a succinct form an account of all the methods of value which have been employed during recent years in investigating the circulation in living man other than the purely clinical methods of auscultation, percussion, and radiography. Since the description of these methods and the results attained by their use are at present scattered in numerous books, periodicals and transactions of societies, it seemed to the author desirable to collect into one volume the matter that has a common interest to the practitioner, the cardiologist, and the physiologist.

The book is divided into two parts, the first dealing with the peripheral circulation and the second with the heart itself. The first chapter of Part I is concerned with the arterial circulation; the various methods employed to estimate the arterial blood pressure are described and criticized, and figures are given of the more important apparatus; then sphygmography is dealt with in the same way, and afterwards the results furnished by the two methods in combination are considered. The absolute sphygmogram is described and explained, the quick and slow pulse and pulse tension discussed, and a short account is given of Martinet's views on the relation between pulse pressure and urinary output. The second and third chapters are devoted to the normal and abnormal venous circulation and the capillary circulation respectively, while the fourth chapter deals with plethysmography, the state of the vessels and the determination of the rapidity of the circulation of the blood. In Part II the methods of cardiac examination are first reviewed; very brief notes on percussion and orthodiagraphy are followed by descriptions of the various methods of graphically recording the heart sounds and murmurs, then cardiograms, or apex tracings are discussed, and pneumocardiograms and rectal tracings mentioned. Oesophagocardiography and electrocardiography are fully dealt with, and the methods of determining the viscosity of the blood and the factors which influence it are described, a few pages being devoted to Martinet's sphygmoviscometry. The author then deals in detail with the motor phenomena of the heart, a lucid account of the essential facts in the anatomy, embryology and physiology being followed by a fairly exhaustive description of the various irregularities, and an account of the systematic examination of the different parts of the heart. The book finishes with a long chapter devoted to a review of the methods which have been proposed for estimating the effective and real work performed by the heart and by the pulse. There is a good index and a full bibliography; one of the features which adds greatly to the usefulness of the work is that all through the text there are constant numbered references, frequently with notes as to the actual page, to the original papers referred to.

It seems to us that the author has fully succeeded in the task he set himself. The grouping together in one volume of all the modern methods of clinical examination of the heart and vessels has great advantages. The style is lucid, and the book contains a careful and on the whole accurate account of the state of knowledge at the date of its publication; the various criticisms of methods and results are judicious and helpful. There need be no hesitation in recommending it to all interested in cardiac medicine. We know of no one other work that covers exactly the same ground.

[3] *Les Méthodes Modernes d'Examen du Coeur et des Vaisseaux. Méthodes, Techniques, Documents Graphiques.* By Dr. J. de Meyer, Agrégé à la Faculté de Médecine de l'Université libre de Bruxelles. Paris: J. B. Baillière et Fils. 1914. (Med. 8vo, pp. 537; 261 figures.)

POPULAR ANATOMY.

The Human Skeleton: An Interpretation,[4] by Professor H. E. WALTER, differs considerably from the generality of books on the subject. Its author is primarily a biologist and not an anatomist, and, as might therefore be anticipated, references to the morphological side of the subject abound, references made more intelligible and permissible by the definition of the "skeleton" as "any supporting tissue"—notochordal, connective, cartilaginous, or osseous. Further, among what are called "external skeletal trimmings," skin, scales, teeth, nails, and hair are included. By the time, however, the reader has progressed through one-fourth of the book he will have left behind him all such "trimmings," as well as unexpected references in a work on the human skeleton to protozoa, mollusca and annelida, and will meet with a more orthodox consideration of the subject.

While it is not quite clear for what class in the community the book is primarily intended, probably it will appeal most to the intelligent layman, particularly if he has obtained at school a general, if elementary, knowledge of biological science. If this be the intention, the work may be welcomed as one of the earliest examples of those books, which will in the future surely increase in numbers, designed to give to the members of the general public an interest in the structure of their own bodies. To the student of biology or anatomy the book may afford a welcome relief from the more stolid works on the subject.

It is written in a colloquial style, with no little disregard for the value of words and the laws of composition. We find a chapter entitled "The handy hand and the makeshift foot" and a paragraph headed "The anthropology of the hair"; we find finger-nails referred to as "digital tips," and we occasionally meet such a sentence as this: "Rotation of the hand, which is gained through the way that radius and ulna are hung from the humerus, is present only in a slight degree in the foot." These blemishes are, however, relatively few and of quite minor consequence in comparison with such important features of the book as accuracy, originality, and, above all, interest. The illustrations are numerous, judiciously selected, and admirably reproduced.

[4] *The Human Skeleton: An Interpretation.* By Professor H. E. Walter, Associate Professor of Biology, Brown University. New York: The Macmillan Company. 1918. (Cr. 8vo, pp. xv + 214; 175 figures. 10s. net.)

NOTES ON BOOKS.

LIEUT.-COLONEL J. H. NEIL'S small work on *Field Ambulance Organization and Administration*[5] is a mine of information, especially upon the subject of administration, and contains a wealth of deposit from "D.M.S. Instructions." Unfortunately the reader must be a vigorous miner in order to gain what he seeks. If the aim is to furnish a handbook and to embody the lessons of the war, the book has one serious failing, for the general principles and the lessons learnt which should stand good for all wars lie beneath a burden of information of which much belongs essentially to war in an enclosed country with its bases

[5] *Field Ambulance Organization and Administration.* By Lieut.-Colonel Jas. Hardie Neil, N.Z.M.C., late Officer Commanding No. 3 New Zealand Field Ambulance. With diagrams. London: H. K. Lewis and Co. 1919. (4s. 6d.)

near home. The remarkable minuteness of detail in the departments of the quartermaster and of orderly room clerical work (to take two examples) would leave upon the mind of the field ambulance officer of the future a somewhat confused impression of what is a matter of first principles and what of detail arising therefrom. The numerous examples of standing orders for almost every conceivable branch of internal organization and administration will be found useful for instructional purposes. The chapter on field ambulance work during active operations is, perhaps, the least satisfactory, and suggests (as is probably the case, since the preface is dated October, 1918) that the field medical lessons of mobile warfare, as learnt in the final advance, have not been incorporated. This work of patient collection has been written amidst the difficulties of interrupted authorship on active service. The printing is good and the book fits handily into the pocket of a service dress jacket.

The *Nerves of the Human Body*,[6] by the late Professor HUGHES, has now been revised and enlarged by Mr. C. R. WHITTAKER. The book provides, within the small compass of seventy-six pages, a clear and accurate description of the various cranial and spinal nerves as well as of the sympathetic system and its "functional distribution." The information conveyed is arranged in a more or less tabulated form and the "old" nomenclature is retained. The only omission we can discover, and one which we think students of clinical medicine and surgery will particularly deplore, is that, while the various cutaneous areas supplied by the nerves of the upper and lower limbs are outlined, no precise indication is given as to the areas supplied by the various spinal nerves. The book is distinguished from others of its class by its possession of illustrations; these are, however, so severely schematic in character as at times to raise a doubt whether they can have any value save for examination purposes. The book is one which can be commended to those who wish to revise their knowledge of the subject and to whom the larger textbooks are for the time being inaccessible.

[6] *Hughes's Nerves of the Human Body.* By Chas. R. Whittaker, F.R.C.S.E., F.R.S.E. Second edition. Edinburgh: E. and S. Livingstone. 1918. (Demy 8vo, pp. 76; 12 plates. 3s. 6d. net.)

INCOME TAX.

MEDICAL WOMEN IN R.A.M.C. WORK.

OUR attention has been called to what appears to amount to a substantial injustice on medical women serving with the R.A.M.C., in that, although they are to all intents and purposes working under conditions similar to those in which commissioned officers of the R.A.M.C. work, yet the fact that they are not paid by the War Office as commissioned officers is held by the Inland Revenue Department to bar their right to the reduced rates of income tax applying to pay for "service of a military or naval character in connexion with the present war for which payment is made out of money provided by Parliament." The source of the money is indisputable, and we should have thought that it was almost as clear that the service was of a "military or naval character."

The fact is, the definitive phrase is too vague for the purpose for which it was intended. Presumably it would not be construed by the Courts to cover the case of a clerk in the Ministry of Munitions or a weekly wage earner working as a riveter in a Government dockyard; but where is the line to be drawn? A local practitioner commissioned as an R.A.M.C. officer automatically received the benefit of the special rate, even though he might be engaged for a substantial portion of his time in keeping his private practice from falling to pieces, and a medical woman employed the whole of her time on military hospital work has equitably at least as much claim to a similar advantage. The natural solution of the whole difficulty would have been to grant commissions to medical women—at any rate where whole-time service was required; but the repeated efforts of the British Medical Association and the Medical Women's Federation, both by memorandum and by deputation, have failed so far to obtain that measure of justice from the War Office.

Assuming that the statutory phrase is not to be construed in a sense so wide as to be nonsense, the department appears to draw the line according to whether or not the service subjects the worker to full military discipline as distinct from damages for breach of a civil contract—or so we gather from such information as we have been able to glean from replies to communications on the subject. The advantage of such a line of demarcation is that it is reasonably unambiguous; the disadvantage is that its results are unreasonably divorced from the common-sense view of the facts. We suggest that it should not be beyond the ability or beneath the dignity of the department to adopt a different construction which would not withhold the "service" rate from medical women doing whole-time service in war hospitals under contract with the War Office.

MEDICAL SOCIETIES IN THE ARMY.

THE externals of outward calm and peaceful surroundings usually associated with the meetings of learned societies were commonly lacking at the gatherings of medical societies of the armies in France, for they were held in diverse structures—the Tarrant hut of a casualty clearing station, a partially demolished factory, or some school from which the customary occupants had been evicted. But noisy as the surroundings might be, from traffic over the pavé or artillery fire, the amicable feelings within, where each participator was concerned solely with relating his own observations and opinions, and not with "crabbing" some other speaker, were such as are sometimes lacking at home.

To many who served out there the memory of these meetings will remain very delightful, and there is no doubt that they fostered clinical enthusiasm and did much to spread information. The first society to hold regular meetings was, we believe, formed at Rouen early in 1915, and owed much of its inception and success to Major-General (then Colonel) Bruce Skinner, C.B., C.M.G., D.D.M.S., and to Sir Berkeley Moynihan, the consulting surgeon at that base. Shortly afterwards, when General Skinner became D.D.M.S. of the Third Corps, he started a Corps Medical Society (June, 1915), and this was, we believe, the first society to meet in the forward area. It continued its meetings at fairly regular intervals until just before the Somme fighting in 1916; after that it was not found possible to revive it owing to the constant changes in the formation of the corps. But during the year it existed many useful subjects were discussed, and some of the papers read before the society were published. The membership consisted of field ambulance and regimental medical officers, with occasional visitors from neighbouring casualty clearing stations. The discussions dealt mainly with front-line problems, such as trench fever, trench feet, trench nephritis, surgery in a field ambulance, the ideal regimental aid post, abdominal wounds. Probably the first public discussion on trench fever ever held took place at one of these meetings, at which also the long-continued type without any marked pyrexia was first described. Nor will the members forget Sir Wilmot Herringham's clear exposition of the incidence of trench nephritis, or Sir Cuthbert Wallace's plea for early surgery in the abdominal wound, when the necessity for rapid evacuation of these cases was first brought home with personal emphasis to a group of medical officers concerned in such work.

With the growth of the armies and the constant moving of divisions it became impossible to carry on corps societies, and the Second Army, with Major-General R. Porter, C.B., its D.M.S., started the first Army Medical Society in the late autumn of 1916. The Fifth and Fourth Armies rapidly followed suit. Naturally such societies had far larger audiences, and it was no uncommon thing for 200 medical officers to meet. The subjects were more diversified, as the work of the casualty clearing station had by this time greatly developed, and many interesting discussions centred round this. The treatment of wounds of special regions—the head, the chest, the abdomen, the knee-joint—always were fruitful in promoting keen debate, as also the effects of gassing, the dysenteries, and other war diseases. Attention to minor maladies, which yet caused enormous wastage—scabies, impetigo, night blindness, etc.—was not overlooked. In selecting subjects for the programme efforts were made to avoid administrative topics, on which discussion by junior officers in the presence of many administrative officers of higher rank was felt to be unwise, and to confine the meetings to matters of purely clinical and professional interest. In this way the fullest debate could take place without any difficulties arising, and when at times a critic did arise to castigate the administrators, the

latter were always ready to regard the meeting as one consisting of brother medical practitioners, and not senior and junior officers.

In the Third Army, the ruling idea was that the greatest good would be obtained from small gatherings at a large number of centres at which officers could come into personal contact with each other. In addition to the corps schools and occasional large meetings for discussion of big subjects, clinical meetings were held at most of the casualty clearing stations to which medical officers from the forward areas were invited, so that, when possible, they could see the cases which they had sent down, and hold informal discussions regarding the early treatment which should be adopted. In this army a special committee was appointed to stimulate and control the investigation and treatment of shock. Under its direction several very well attended meetings were held, at which progress was reported and suggestions made as to the lines along which further improvements and investigations might be made. When opportunity offered, officers from the forward areas were detailed to spend two or three weeks at special casualty clearing stations in order to perfect themselves in the technique of blood transfusion, gum infusion, applications of special splints, and so forth. In addition, the consultant surgeon of the army gave short lectures from time to time to divisional medical officers assembled at one of the divisional dressing stations. Medical officers of all ranks were encouraged to pay visits to neighbouring units in order to see what was being done. In these various ways a spirit of collaboration and friendly competition was fostered, with very beneficial results to the sick and wounded. Small pamphlets dealing with the general work of the regimental medical officer, with the treatment of wounded in advanced areas, and with operative treatment at the casualty clearing stations were issued from time to time. Before big battles recommendations by the consultant surgeon as to surgical work were issued to casualty clearing stations, and, after the battles, statistical reports and critical remarks on the work done in the different units were circulated. All these arrangements had their origin or sanction from the indefatigable and highly popular D.M.S. of the army, Sir J. Murray Irwin, whose interest and helpfulness in professional matters were greatly appreciated by all who came in contact with him.

Simultaneously with the advent of the army societies the base societies became more active, and an "interchange of pulpits" was sometimes arranged between base and front, the better to unify different points of view. The Boulogne Base Society probably had the record attendance in 1918, when Lieut.-General Sir Charles Burtchaell lectured on man power. Apart from stimulating professional interest, the societies did useful work in bringing together men who were working in different zones. The regimental medical officer, the field ambulance officer, and the casualty clearing station officer thus met and learnt each other's point of view, and a feeling so often present that the man in the unit behind was having an easier time than his colleague further forward, or was hypercritical of his methods, was in this way lessened if not abolished.

The knowledge gained, the friendships cemented, and the welcome opportunity of talking pure "shop," not to mention the tea served by the sisters when the meeting took place at a casualty clearing station, combine to form a memory which will be lasting with many.

THE SPECIAL RESERVE OF OFFICERS, R.A.M.C.

[FROM A CORRESPONDENT.]

THE Special Reserve of Officers, R.A.M.C., exists to furnish a supply of adequately trained medical officers to complete the war establishment of medical units of the Expeditionary Force. It is an essential feature of their conditions of service that they shall be ready at a moment's notice to join their war units and proceed forthwith to the sphere of operations.

The Special Reserve of Officers, R.A.M.C., is capable of presenting certain conditions more nearly approaching the ideal than is possible in the case of other arms of the service. For to a medical officer some seven-tenths of his value lies in his practical ability as a doctor.

Before the war the training laid down consisted of (1) three months' probationary training at the dépôt, followed by examination and (if satisfactory) confirmation in the rank of lieutenant; and (2) after three and a half years' service and after a month's training with an approved regular unit and examination, promotion to captain. Officers were eligible for promotion to the rank of major after twelve years' service, but the conditions were not laid down.

It is evident that the public has the right to demand that this Special Reserve of Officers, who are to be ready for war at a moment's notice, should be kept at a high level of military medical proficiency. The type of doctor that is needed is the general practitioner.

Let us examine the conditions of service. In the first place, it must not be forgotten that before the war the auxiliary forces were obtained from patriotic enthusiasts who foresaw war. They were ready to make sacrifices in the national interest because they themselves saw the need, and also because they realized that the bulk of the nation could not see it.

In return, then, for a retaining fee of £20 a year and a sum of £50 paid on mobilization, the R.A.M.C. officer "proceeded forthwith," and in most cases probably lost his practice, and with it his total capital in some instances. It cannot be helped, probably. These officers must be ready at a moment's notice. It should be possible for the Territorial Force officers to have at least a fortnight to make some arrangements in any future war, but a reserve of adequately trained medical officers ready to join their war units at a moment's notice is an absolute necessity. For this necessity the Special Reserve of Officers exists.

The general practitioner of the future will not, and, indeed, after what we have learnt, should not be expected to serve on the old terms. If the public are to have this reserve, two things are needful, and one is the safeguarding of the public from paying for those who are not fit for war at a moment's notice, whilst the other is a more adequate remuneration for the officer.

The war must have impressed upon all who have served the absolute necessity for a continuous and merciless weeding out of the incapable, the unfit, and the unsuitable if the filling of the higher ranks with dead material is to be avoided and paralysis of the service prevented. No officer should be promoted on account of seniority alone. He must be fit to perform all the duties of the higher rank.

Provided that the public is safeguarded from paying in peace time for a reserve of officers unfit for their functions in war, that public should not grudge adequate remuneration for those who maintain their proficiency. Twenty pounds a year is not a sufficient "retaining fee," nor £50 a sufficient "disturbance fee."

With adequate safeguards to ensure proficiency, it is submitted that the scale shown below is a fair one:

	£
A. *Annual Gratuity:*	
Lieutenants	20
Captains of less than 7 years' service	30
Captains of more than 7 years but less than 10 years' service	40
Captains of more than 10 years' service	50
Majors	60
Majors of more than 3 years' service as such	70
Lieut.-colonels	80
Lieut.-colonels of more than 3 years' service as such	90
Colonels	100
B. *Gratuity on Mobilization:*	
1. Under 7 years' service	100
2. Over 7 and under 14 years' service	200
3. Over 14 years' service	300

C. Promotion above the rank of major to be by selection after such trainings and examinations as may be laid down, and independent of seniority.

In order to safeguard the public it should be necessary that an officer be recommended as "fit for promotion in every respect"—moral, physique, training, knowledge; and the medical examination should not be as against a standard in books, but after a test of reasonable endurance

Provision might be made for officers above the rank of captain who have specialized to transfer to the Territorial Force for service with a general or stationary hospital, but the Special Reserve officer must be capable of performing any duty of his rank which may be required of him.

We have heard a good deal of criticism of an administration which failed to employ the members of the host

of specialists in their proper spheres, but the great demand in war is for the man who can be set to any task in field ambulance or in regimental or administrative duties, and it is amongst this class that the greatest war wastage must occur. They must be ready at a moment's notice, and the Special Reserve must furnish them; in the first instance, to complete the war establishments of the medical units in the regular divisions of the Expeditionary Force; later, for advancement in the divisions of conscripted troops raised by Act of Parliament after the declaration of war.

The labourer must be worthy of his hire, and the hire of the labourer.

AN ANTE-NATAL CLINIC.

In view of the increasing interest in ante-natal work, Dr. Robert A. Hendry, prematernity officer of the Liverpool Maternity Hospital, sends us the following account of a morning's work at a clinic.

In April, 1916, the Liverpool Maternity Hospital increased the scope of the ante-natal work by opening a series of clinics in conjunction with the Health Committee of the Liverpool Corporation. The clinic is held twice a month at the Corporation Milk Dépôt, 52, Earle Road. On June 17th, 1919, early in the fourth year after its foundation, thirty patients attended.

Twelve were first attendances; seven were referred by midwives, one by the assistant in the milk dépôt, and four on recommendations of former patients; five may be described as "major" cases, seven as "minor."

Two patients, brought by midwives, had contracted pelves; one woman had a small round pelvis with a diagonal conjugate of 3¾ in., and had had a Caesarean section after two stillbirths. She wished to know if an "induction wouldn't do"; much time was required to explain that the decision between induction and Caesarean section depended mainly on the size of the baby in the later weeks. Appropriate means have been taken to keep in touch with her. The other patient had a small round pelvis, diagonal conjugate 4¼ in.; her first child was stillborn, the second pregnancy ended in abortion at 6 months; she will remain under supervision in case induction becomes advisable.

Two women reported "slight shows" early in pregnancy; no abnormal features were noted on examination; they were advised as to conduct, etc., and to get the midwife to call in a medical practitioner at home if there were any further bleeding, no matter how slight. From one woman, whose last five pregnancies had terminated prematurely, the infants living only a few hours or days, blood was taken for the Wassermann test, since reported "slightly positive."

From the fifth "major" case, a swab of the profuse vaginal discharge was taken; examination showed that gonococci were not present. Instructions were given, and a bandage was supplied for varicose veins.

Of the seven "minor" cases, two desired to know the period of gestation—one, aged 42, had had no pregnancies for eleven years, "quickening" roused her suspicion that it was not the "change"; she was found to be five months pregnant. Two cases of varicose veins, and one each of backache, vomiting and nerves, and prolapse of vaginal walls, comprised the remaining minor cases. Eight of the twelve required treatment for constipation and flatulence. Of the eighteen old cases—four had attended in former pregnancies; one now convalescent after pleurisy, had had albuminuria and oedema two years ago, urine now normal; two had minor discomforts (flatulence, constipation, and backache) and varicose veins. The fourth "return case" attended first in May, 1917; she had four children living out of the first five born alive; the last four children were stillborn; the Wassermann reaction was positive; galyl and mercury and chalk were prescribed. A healthy girl of over average size, born January, 1918, continues to thrive. In March, 1918, the Wassermann reaction was negative. In May, 1919, an assistant inspector of midwives was asked to get her to report at the clinic; she attended on May 20th and reported menstrual irregularity and an abortion (?) during the last year and amenorrhoea since March 29th; the Wassermann reaction was negative. On June 17th she reported a flooding two weeks previously, and declined vaginal examination.

Two other patients gave positive Wassermann reactions—the one, after two pregnancies, both abortions, nine and four years ago, was three months pregnant; the other had one living child—the second, the first and third were premature and survived only a few weeks, the fourth was stillborn; she has been under treatment since October, 1918; a healthy girl was born November 25th, and is now thriving.

It may be stated here that these patients decline to attend at the venereal disease clinics.

One patient gave a history of repeated abortions, and another of three premature births, of which one was stillborn and two survived a few hours; the Wassermann reaction was negative in both these cases.

A primigravida with a small round pelvis, conjugate diameter 3½ in., now seven months pregnant, is under observation for decision between induction and Caesarean section.

A 5-gravida, with mitral stenosis and some cardiac embarrassment, six months pregnant, was advised to enter the Rest Home.

A 4-gravida, who had been sent into the Maternity Hospital with cystitis, was reported almost well. She was referred here in the first instance by a midwife, but wished to go into the hospital for her confinement, as she was so comfortable. She was told that her midwife would arrange this for her (in which case the midwife receives the fee).

Thriving twin boys, three weeks old, about six pounds each in weight, were brought up for inspection by a mother; she was advised to attend at the Infant Welfare Centre.

The remaining six patients included four cases of flatulence and constipation; one was neurotic, and the fourth was an anaemic primigravida who desired to enter the hospital for her confinement.

Little comment is required on such a morning's work. As a routine, the urine of each patient is examined once a month, blood is taken for the Wassermann test where there is a history of abortions, stillbirths, etc., and swabs of vaginal discharge in cases of leucorrhoea.

It is only fair to state that the clinic on this day was slightly more interesting than usual; it is not the largest ante-natal clinic in Liverpool—in the same week 80 patients (20 new and 60 old) attended at another clinic.

The majority of complaints are what I have described as "minor"; constipation, flatulence, vomiting, backache, varicose veins, etc., are much commoner than contracted pelves, albuminuria, and syphilis; from the patient's point of view they cause much greater discomfort.

It is sometimes objected that there is too much "pills and petting" at the clinics. Both are necessary—in moderation, of course—the former to relieve the minor troubles, the latter to persuade the "major" cases to attend regularly in spite of the repeated necessary examinations, injections (grey oil), etc.

ROYAL MEDICAL BENEVOLENT FUND.

At the last meeting of the Committee held on August 12th thirty cases were considered and £308 10s. voted to twenty-seven of the applicants. The following is a summary of some of the cases relieved:

Daughter, aged 47, of M.D.Lond. who died in 1873. Lives with two elder sisters, one of whom receives help from the Fund. Has £15 per annum from dividends. Used to take in pupils, but now wishes to commence a school, and asks for help towards books, stationery, etc. Voted £12 10s.

M.R.C.S.Eng., aged 44. Was in a serious motor accident in June, 1918; is still suffering from head injury and loss of memory, is quite unable to work, and has had to sell his practice. Receives £24 pension from Poor Law and £6 6s. a month from the Medical Sickness Society. Rent and rates £57 15s. 6d. Has three children; the eldest girl is at home, and the two other children are at school. Voted £50.

Widow, aged 60, of L.R.C.P.Edin. who died in 1902. Is at present doing domestic work at 9s. a week, but she suffers from ill health, and was in the infirmary for a greater part of last summer. Has one daughter, who acts as a children's nurse and receives £26 a year. Relieved six times, £50. Voted £12 in twelve instalments.

Daughter, aged 64, of L.F.P.S.Glasg. who died in 1883. Is unable to work owing to ill health. Only income £15 from the Scottish Indigent Women's Fund. Pays £10 a year rent. Relieved eleven times, £116. Voted £18 in twelve instalments.

Daughter, aged 38, of M.D.Dubl. who died in 1884. Lives with her mother, who receives a pension of £50 per annum. Suffers from ill health and is unable to earn her own living. Relieved thirteen times, £120. Voted £10 in two instalments.

Widow, aged 63, of L.R.C.P. and S.Glasg. who died in 1902. Was left unprovided for with two children, who are now working and pay their mother £1 a week each, and applicant receives about £12 a year by needlework. Relieved thirteen times, £142. Voted £5.

Daughter, aged 68, of M.R.C.S.Eng. who died in 1851. Receives £6 a year from dividends, and £52 a year from friends. Lost all her money through the failure of an Australian bank. Suffers from ill health. Relieved six times, £72. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is overwhelmed, in these days of exorbitant prices for clothing and household necessaries, with applications for coats and skirts for ladies and girls holding secretarial posts and suits for working boys. The Guild appeals for second-hand clothes and household articles for the benefit of the widows and children who, in happier times, would not have needed assistance. The gifts should be sent to the Secretary of the Guild, 43, Bolsover Street, W.1.

British Medical Journal.

SATURDAY, SEPTEMBER 20TH, 1919.

INFLUENZA IN LONDON.

DR. W. H. HAMER'S report[1] to the County Council on the three waves of influenza is, as might have been anticipated, an interesting contribution to the literature of epidemiology.

Deaths in London certified as caused by influenza numbered 894 in the summer of 1918, in the autumn 11,336, and in the winter 3,278. Paying attention to excess mortality from other causes, it seems probable that the first wave destroyed some 1,750, the second about 16,000, and the third about 5,000 lives. Although in the 1890 pandemic the incidence upon ages 20 to 45 was relatively heavier than in 1847–48, the course of the disease after 1890 did not prepare us for the enormous toll of young adult lives taken in 1918. In the County of London 23 per cent. of the total mortality in the third quarter of 1918 was borne by the age group 15–25 amongst females, 15 per cent. being the proportion for males; 19 and 12 per cent. are the corresponding proportions in the last quarter of 1918. In females more than half and in males nearly half the total mortality was experienced by persons aged 15–45. These figures refer only to deaths certified under influenza.

In this report Dr. Hamer develops the epidemiological hypothesis advanced by him in the Milroy lectures of 1906 and defended in a recent contribution to the *Proceedings* of the Royal Society of Medicine (Section of Epidemiology and State Medicine). Dr. Hamer's hypothesis may be summarized in the following way: Although presenting varied clinical forms, influenza as an epidemic or pandemic disease has a unity which can be recognized through centuries; great outbursts of disease, sometimes fatal, sometimes not, which received different names—the Sweat, the New Fever, the New Ague, etc.—were all instances of epidemic or pandemic influenza. If the antecedents of these outbursts are examined it will be found that each great epidemic was encompassed by a cloud of smaller epidemics, other "new" and "mysterious" fevers, which often exhibited signs and symptoms referable to the nervous system. Influenza is attended by satellites or, to change the metaphor, preceded by heralds whose tabards most spectators cannot blazon. It follows that the recent association in time of cerebrospinal fever, polioencephalitis, and influenza has been misunderstood; it was not casual, but an ordered sequence. From this hypothesis, based upon a historical induction, Dr. Hamer deduces conclusions not likely to be welcome to the bacteriologists, who, however, must by now be hardened to the jet of icy water which arises from the epidemiological fountain on Savoy Hill.

Dr. Hamer's hypothesis rests, we think, upon two propositions. The first is that the identification of the variously named outbreaks with influenza is just; the second, that, admitting the identification of the major outbreaks, the intercurrents are really linked with them by a causal nexus. With respect to the former proposition, we see that on the first page of his new report Dr. Hamer roundly asserts that the sweat of 1485 was one of the earliest influenzas in history, and on p. 11 writes that the five English sweats "were undoubtedly influenzas." We have good literary authority for the proposition that "what I tell you three times is true," and Dr. Hamer has made the identification more than three times. Yet we do not feel confident that sufficient new light has been thrown on the historical question to convert what was in 1906 an arguable proposition into an undoubted fact. Of the historical epidemiologists who considered the point—using the same sources of information as Dr. Hamer—Haeser came, perhaps, nearest to his position, and Haeser merely says: "The English sweat must be regarded as an absolutely special disease (*durchaus eigenthümliche Krankheit*). Nevertheless, its affinity to influenza, which it resembles in rapidity and universality but not in the direction of its spreading, is unmistakable." We do not, therefore, find the identity of the English sweat and influenza either undoubted or unmistakable.

However, let us waive the point, admit the identification, and pass to the second proposition, of a non-fortuitous relation between the obscure nervous precursors and the influenzal outbreak—that is, that a mutating *materies morbi* is the connecting link. From Dr. Hamer's table, published in his Milroy lectures and referred to in the present report, it would appear that in two of the five sweats (1528 and 1551) there is no suggestion of any previous "encephalitis"; can we really infer more than that prior to any great epidemic sickness, anomalous illnesses may be seen, perhaps indicative of a generally low state of resistance to any infection? Sydenham begins his account of the epidemic constitution of 1666 by remarking that an "epidemic (continued fever) appeared which was wholly different in character from the continued fevers that prevailed during the preceding constitution," and goes on to refer to the intensity of the pain in the head and the severe vomiting. What was the nature of this disease? Are we sure that the mysterious nervous satellites do really revolve round the influenzal planet? Ought not other heavenly bodies to be considered?

Lastly, there is in this method of research the danger that, just as one remembers dreams which came true and forgets the others, annals of the circumstances attendant upon great epidemics are much more complete than those of less exciting times; statistically our experience is not a random sample of associations between diseases; the record is defective.

We must not, however, take leave of Dr. Hamer without expressing our sense of the value attaching to his work. Dr. Hamer has never swerved from the true faith that there is really a science of epidemiology which is not a mere subdivision of statistics, bacteriology, or medical history, although the methods of all three disciplines are needed by the epidemiologist. This has not been a popular faith, and it may be that Dr. Hamer has contracted some of the intellectual peculiarities of a minority, but we think that he will not always be in a minority.

[1] *Influenza—Report by the County Medical Officer of Health.* Published for the London County Council by P. S. King and Son, Ltd. London. 1919.

TEETH AND THE NATION.

NAPOLEON said that an army moved upon its belly, and it may be added that its motor members are its teeth. Bully beef and hard tack require good grinders, and the lack of them cannot be made up by an improvised Ministry of Munitions. What is true of war is true also of peace. The health of the nation lies in good digestion, and there is no good digestion (save in

babes) where there are no teeth. Yet many of the people are toothless, and it is no wonder that the call of the insured patient upon his doctor is heavy.

Of recent years there has been a growing call for more and better dental treatment. There is no section of the medical profession which has not certified the necessity. The physician tells of progressive alimentary troubles, the throat surgeon of lymphoid growths and defective breathing, the eye surgeon of grave cyclitis and loss of vision, and all aver that the source of these troubles is a foul mouth and bad teeth. Finally, the war and the examination of recruits revealed a sorry tale of low categories due to defective teeth. Attention, so far, has been rightly centred upon the care of the teeth of the children, and to this end there has been a considerable extension of conservative surgery in the school clinics. But at the recent Conference of Local Medical and Panel Committees it was unanimously resolved that the additional services to the panel service should as early as possible be made to include dental treatment.

The general conditions of dental work have been under consideration by a special committee of the British Dental Association, which has issued a report dated July 1st outlining a scheme to provide: (1) Dental treatment for expectant mothers and for children up to 5 years of age; (2) inspection and treatment of all children of school age; (3) treatment for all adults whether entitled to National Insurance benefit or not; (4) dental treatment as an essential element in the cure of tuberculosis and venereal disease. The Committee recommended the establishment of a Dental Section of the Ministry of Health under a dental director. Uniform control would permit of the establishment of central dental clinics by local health authorities, where, by suitable arrangement and at different hours, the treatment of the first three of the above mentioned classes would be possible by the same staff. It is suggested that the staff should for the main part consist of permanent officers with the help, if necessary, of part-time officers, and that the various types of work should be well distributed so as to relieve the strain at present felt by the school dental surgeon who has to deal with children all his time. There should be suitable female assistance at each clinic and the services of an anaesthetist should be available. The clinics should be grouped round central laboratories where the necessary mechanical work such as the provision of dentures could be performed.

Pending the formation of such a National Dental Service the report recommends that efforts should be made to meet immediate requirements by the extension of the system of factory clinics established by the owners of large works, by public support of similar schemes established by members of the dental profession in various parts of the country, and by establishing in certain of the large industrial areas experimental clinics working on the lines laid down in the report. It is thought that the capital outlay required to carry out these suggestions would not be great.

The British Dental Association is to be congratulated upon its report. It is a fitting response to the recommendation of the Departmental Committee on the Dentists Act, which reads:

"In conclusion, we wish to state very strongly that in our opinion the State cannot afford to allow the health of the workers of the nation to be continuously undermined by dental neglect. Steps should be taken without delay to recognize dentistry as one of the chief, if not the chief, means for preventing ill health, and every possible means should be employed for enlightening the public as to the need for conservative treatment of diseased teeth. The dental profession should be regarded as one of the outposts of preventive medicine, and as such encouraged and assisted by the State. Treatment should be rendered available for all needing it."

The report of the British Dental Association shows how this recommendation could be translated into action. It is greatly to be hoped that at this period of national reconstruction the Ministry of Health will give heed to the voice of the expert and make a beginning in organizing dental treatment. May there be no repetition of the dilatoriness which so long delayed similar provision for our naval and military forces during the war, in the manner described by Mr. Montagu F. Hopson in his presidential address to the British Dental Association. With one point alone the report does not deal—namely, the provision of a sufficient personnel for the service. The report suggests a scheme of payment for services rendered, both on a whole-time and a part-time basis; but would these rates be likely to attract a sufficient supply of trained dentists to the service? The work would be honourable, but the pay moderate, and we are inclined to doubt if it would stimulate the expenditure of four years of time and much money on the preparatory training. A father might deem it better to put his son or daughter into some service that made a smaller demand on his pocket and was more easily approached. The needs of the situation may render necessary some such scheme for the development of the personnel of a national dental service as is now employed in the training of teachers for the educational service.

THE PREVENTION OF ANAPHYLACTIC SHOCK.

In an important communication to the Académie des Sciences, Richet, Brodin, and Saint-Girons[1] make the following statement: "If three weeks after a preliminary (sensitizing) injection of horse plasma into a dog we give the same dog another (assaulting) injection of 50 c.cm. of the same horse plasma, the anaphylactic reaction, *which never fails*, is abrupt, sudden, and intense. Diarrhoea, almost haemorrhagic intestinal congestion, rectal tenesmus, vomiting, dilatation of the pupils, lowering of the arterial pressure, absolute motor paralysis, asphyxiated respiration, feeble cardiac contractions, and a weak pulse are the phenomena that result. Usually death occurs in two or three hours, sometimes even in a few minutes. If instead of injecting the plasma alone we inject the same quantity of plasma diluted with nine times its volume of isotonic salt solution, practically nothing happens. At the most there is slight diarrhoea and rectal tenesmus with faint paretic disturbances in the muscular function, but quite rapidly, in a quarter to half an hour, these pass off, and the animal recovers without any difficulty. It is not the mere dilution of the plasma that prevents the explosion of the assaulting injection, for if we substitute for the isotonic salt an isotonic solution of glucose, or a 0.4 per cent. solution of sodium chloride or distilled water, anaphylactic phenomena are produced almost as intense as if plasma alone had been used, and death occurs in the majority of these cases. Similarly, if we dilute the plasma with five instead of nine volumes of isotonic salt solution, the same explosive phenomena are called forth. Again, if the salt solution be injected first and the plasma afterwards, the anaphylactic shock is not avoided, whether the salt be injected forty-eight hours previously or even immediately beforehand. The reason probably is that the sodium chloride is so very rapidly eliminated in the urine: even in half a minute there is an increase in the

[1] *C. R. de l'Académie des Sciences*, July 7th, 1919.

salt content of the urine. If, however, large quantities of salt are injected the body is saturated with it, and the excess persists for some time. The injection of 75 c.cm. of a 20 per cent. solution of salt half an hour before the injection of the plasma into a dog prevented the occurrence of anaphylaxis. It would thus seem that the sodium chloride had a protective action against the assaulting injection. It was found that 3.6 grams of salt when mixed with the plasma had this protective effect, much smaller quantities being inefficacious. If the injection of salt is given before the injection of plasma very much larger quantities, impossible to calculate, would be required, since the elimination of the salt takes place with extreme rapidity. It would appear, then, as if the sodium chloride impregnated the nerve cells and rendered them immune to the anaphylactic poison." The authors connect this phenomenon with facts that Richet demonstrated several years ago on hyperchloridization. He showed that deprivation of sodium chloride rendered the organism much more sensitive to the toxic or therapeutic action of potassium bromide, whilst Lesné and Ch. Richet, jun., showed that the addition of a strong dose of sodium chloride rendered the body much less sensitive to the action of poisons. If the nerve cells are protected by strong doses of salt against the anaphylactic reaction, it is probably because they are saturated with the salt and have thus become less capable of fixing other poisons on their protoplasm. Richet and his collaborators think that it is permissible to hope that a new method of immunization has been discovered which is almost comparable with anti-anaphylaxis, although not identical with what follows the injection of very minute doses of the assaulting substance. It is probable that this immunizing action of large doses of sodium chloride is general, and that it is not peculiar either to the dog or to horse plasma. When there is a lack of salt the cells more readily fix the poisons, and when there is an excess the fixation is rendered difficult.

MALARIA IN MALAYA.

THE Malaria Advisory Board of the Federated Malay States appointed in November, 1911, to advise the Government as to a general campaign against malaria in the Federated Malay States, published a special report in 1914 covering the period down to the end of the year 1913. In a report issued recently the Board states that thorough drainage was attempted in many places. To be useful as a measure against malaria all land in a drained area must normally be perfectly dry at the surface, and be rapidly freed from water even after heavy falls of rain; drainage water must flow with a fair velocity in channels free from obstruction; and all bodies of still water must be of some depth and be entirely free from vegetation. Underdrainage is essential only in so far as it is needed to satisfy these requirements. The results obtained at Kuala Lumpor in an area completely drained are a conclusive proof of the soundness of the method, and, in so far at least as populous towns are concerned, of its being the best method in the light of present knowledge. No drainage scheme has yet had a fair demonstration, they say, unaffected by some avoidable factor unfavourable to it. The disadvantages of the method are that it demands a degree of competent and close technical supervision not yet generally available. Drainage, if well constructed, is, however, simple to maintain. Oiling of mosquito breeding places is still being carried out in many instances, but the committee does not express any definite opinion on the relative efficiency and economy of this and similar methods used in the Federated Malay States. Dr. Strickland strongly advocates the encouragement of dense natural growth in ravines as the most suitable method of preventing or reducing malaria in the hilly country of the Malay States. His observations go to show that in most hill jungle no malaria-carrying anopheles exist, and that the preservation of jungle land in ravines and swamp in hilly land, or the encouragement of dense natural growth where the jungle does not exist, are important antimalarial measures; but he would not apply this to coastal jungle other than mangrove forests. The Board has these points under investigation, and as far as can be stated at present the method appears to offer advantages in dealing with certain classes of districts. The Board believes that malaria is the great natural obstacle to the economical and humane development of the Malay States, and equally concerns all classes of the community. That it will yield to a suitable campaign cannot be doubted, and the progress already made is a sufficient guarantee.

THE PHILOSOPHY OF MUSIC.

COLONEL KENNETH MACLEOD has published an interesting essay[1] on what he calls "musical thought," in which he contends that music is not a limited art, but a universal attribute of material energy and an essential attribute of organized vitality. We are not sure that we rightly apprehend his meaning; but if the proposition is intended to imply that the musical sense is universal in living beings, we think it too sweeping. Even among men of the highest intellectual culture and of the keenest sensibility to other forms of artistic expression, many have no music in themselves and are not moved by concourse of sweet sounds. Dr. Johnson thought music "of all noises the least disagreeable," a sentiment somewhat differently expressed by Théophile Gautier, who described it as the most expensive of all noises. Some, like Bottom—that precursor of the Futurists—who claimed that he had a reasonable good ear in music, might cry, "Let us have the tongs and the bones." Colonel Macleod discusses the effects and influence of music. He says its influence on lower animals is seen in the response of snakes to the charmers, in the dancing bear, and in other instances. Who does not know the passage in Job on the warhorse? "He saith among the trumpets, Ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting." In man the power of music to revive flagging energies, to sustain failing courage, and to inspire heroic deeds is well recognized. Robert Burton gives the pith of the matter in one sentence of his *Anatomy of Melancholy*: "Labouring men that sing to their work can tell us much, and so can soldiers when they go to fight, whom terror of death cannot so much affright as the sound of trumpet, drum, fife, and such-like music animates." In all stages of human evolution rhythmical sound has been used to rouse the spirit of man in war and in worship, rejoicing and mourning. Savages dance themselves into warlike rage by the throbbing of their big drums. Many of the psalms are battle songs, and ages later stirred Cromwell's Puritan soldiers to deeds of daring. Tyrtaeus fired the Lacedaemonians in their struggle with the Massenians, and his warlike airs were played as long as the Spartan republic endured. Carlyle says of the "Marseillaise" that the sound of it "will make the blood tingle in men's veins and whole armies and assemblages will sing it, with eyes weeping and burning, with hearts defiant of Death, Despot and Devil." That most famous of war songs played a great part in the recent struggle of nations. In the American civil war "Marching through Georgia" and "John Brown's Body" stimulated men to effort and endurance, and "Tipperary" proved a help to soldiers in France and Flanders. Colonel Macleod refers to Stephen Graham's description of the march of a Highland regiment across the Rhine: the men tramped through forest and marsh wet to the skin, footsore and tired almost to exhaustion, but heartened by the skirl of the bagpipes. Napoleon when crossing the Alps made the bands play when the guns had to be dragged over difficult places. At Waterloo the Old Guard was played into action in its last hopeless charge. Some years ago

[1] *Caledonian Medical Journal*, May, 1919.

certain sapient persons in France did away with bands and even with drums in the army; but this ill-considered ordinance had soon to be repealed. That the music is not a mere matter of beating time has recently been shown by some experiments, which proved that soldiers march in better time without any musical accompaniment. Much has been written of the healing power of music in some mental disorders, and of its influence in soothing pain. Among those who have written on it are Jean L. Desessarts, Dean of the Medical Faculty of Paris, who presented a memoir on the curative power of music in 1803; and in 1895, before the same learned body[1] M. Ferrand read a paper on the physiology of music. Some twenty years ago the late Frederick Kill Harford, Minor Canon of Westminster, founded the St. Cecilia Guild to test the therapeutic influence of music. The movement had the approval of Sir Andrew Clark and other well-known members of the medical profession, and experiments were made in the London Temperance Hospital which gave fair promise of success; but the Guild came to grief, and, as far as we know, nothing has since been done in this country to organize research on music as a healing agent. In Columbia University, New York, courses of "musico-therapy" have recently been established in which the indications for specific instruments in the treatment of shell-shock neuroses are studied. It would be easy to collect a large body of testimony from ancient and modern writers to the power of music, but that of Bacon seems specially apposite. He says: "The genius of music and medicine are alike. The function of the physician is to tune the lyre of the human body so that it shall give forth sweet and harmonious sounds"

THE DURATION OF NORMAL CONVALESCENCE.

FROM an analysis of the notes of 5,000 soldiers treated in a convalescent camp in France, Bridgman[2] brings forward the results of what is believed to be the first attempt to determine the proper length of convalescence by physical tests. The underlying principle of the camp was to retrain soldiers by physical exercises in order that they should on their return to the front be both physically and mentally fit. On admission the stripped patients were physically examined, and were placed in one of three grades, promotion through which depended on ability to carry out the work and play of the particular group without bad symptoms, the drills being watched by medical officers. The results of this scheme were extremely satisfactory, as subsequent inquiry showed that more than 99 per cent. of men discharged to full duty, and not killed, wounded, or gassed, had remained there, and that those re-classed to lower categories were doing the work of their grade. By this means the neurasthenia, anxiety neuroses, and effort syndrome which often follow return to the strains of life after a short interval from an acute infection or operation may be prevented. The striking point about the periods of convalescence shown to be necessary by Bridgman's observations is that they are so much longer than those generally accepted in ordinary practice. The possibility that even a subconscious desire on the part of the American "doughboy" to remain out of the fighting line could have protracted convalescence was considered unlikely to apply to more than a very small percentage. In ordinary life most patients with tonsillitis or sinusitis are out of bed and back at their daily work in seven to ten days, whereas these young soldiers who were previously in the best physical condition did not regain their normal strength for five weeks from the onset. An average attack of mumps requires a period of five weeks, pneumonia more than eight, and scarlet fever more than eleven weeks; operation for piles necessitates six and a half, and for herniotomy seven weeks' convalescence. These results raise the uneasy feeling that we are often unconsciously taking risks, not only with our patients but also with ourselves, and that tuberculosis or cardiac disease may date from an infection followed by too short a respite from work.

[1] *Bull. de l'Acad. de Méd.*, No. 32, 1903.
[2] E. W. Bridgman, *Arch. Int. Med.*, Chicago, 1919, xxiv, 65-69.

THE MEDICAL DEFENCE UNION.

THE annual report of the Medical Defence Union for 1918, which has just been issued, shows that there was no falling off in the activities of this useful organization during the last phase of the war. As might indeed have been expected, the many problems of demobilization and resettlement have increased the work of the Union, and there is every prospect that under the changing conditions of medical practice the importance of belonging to a defensive organization of this kind will be recognized more than ever before. The council takes this opportunity of recording its deep regret at the loss sustained by the death of Dr. A. G. Bateman, and its appreciation of his untiring services on behalf of the Union and the medical profession. "Probably no one was better acquainted with the customs, conventions, and traditions of medical practice, or with the rights, liberties, privileges, duties, and ethical obligations of medical men in their relation with each other and with the public." This tribute will, we feel sure, be endorsed by every medical practitioner who had knowledge of Dr. Bateman and his work. It must be a source of satisfaction to the Medical Defence Union, whose work dovetails in with that of the British Medical Association at so many points, to have as Dr. Bateman's successor Dr. James Neal, whose special qualifications for the post are familiar to so many members of the Association. Dr. Bateman was a valued member of the Central Ethical Committee of the British Medical Association, and our readers will be glad to know that Dr. Neal has been appointed a member of that Committee. The report before us gives a brief account of the varied work of the Union during the past year. Difficulties in connexion with the National Insurance Acts, it says, have been as numerous as ever, and have afforded evidence in many instances of the utterly impossible position in which medical practitioners are placed under the present system. Mr. W. E. Hempson, the solicitor to the Union, in his account of legal business, says that the trend of the work of the Union during the past two years has been less in the direction of litigation than towards composing matters of professional difference arising out of the altered circumstances brought about by war conditions. But he ventures the opinion that now that national affairs have assumed more normal shape a recrudescence of litigation is to be looked for in the near future. Mr. Hempson's statement as to the present immunities of unqualified practice might well be noted by members of Parliament who think that the law protects the public against this form of imposture.

SCIENTIFIC AND INDUSTRIAL RESEARCH.

THE fourth annual report of the Committee of the Privy Council for Scientific and Industrial Research[1] has just been issued; it covers the period from August 1st, 1918, to July 31st, 1919. Earl Curzon of Kedleston, the Lord President, records that during the past year the work of the Department of Scientific and Industrial Research has steadily grown in usefulness and in amount. The passage from war to peace, he says, reveals more and more clearly as it proceeds the need for the sympathetic encouragement and organization of research in every sphere of national life. Encouraging progress is recorded in several directions. Thus a marked change is observed to be taking place in the attitude of industry towards scientific research; both masters and men are beginning to recognize its vital importance. Something also has been done to increase the number of trained research workers, the demand for

[1] Cmd. 320. H.M. Stationery Office. Price 6d. net.

whose services rose rapidly not only in industries, but also in the universities and Government departments. The report of the Advisory Council, signed by the administrative chairman, Sir William McCormick, describes in greater detail the various branches of the Department's work. The work of the Food Investigation Board grew enormously during the year. The field to be covered is so large and the range of scientific knowledge so wide, that only a complex organization could hope to deal with the problems effectively. The Board accordingly set up six committees to deal respectively with fish preservation, engineering, meat preservation, fruit and vegetables, oils and fats, and canned foods; and these committees have in turn appointed seven special committees. The therapeutic uses of oxygen, shown by recent practice to be capable of very great extension, are being actively investigated by the Medical Research Committee in close co-operation with the Oxygen Research Committee of the Department. The Industrial Fatigue Research Board was established jointly by the Medical Research Committee and the Department, the former being responsible for administration. The demands made upon the Board have far exceeded all anticipation, while industrial unrest, believed by many to be closely related to present ignorance of the laws of fatigue and the best modes of applying them in practice, has emphasized the importance of this branch of research.

RABBIT HOT AND RABBIT COLD.

THE German troops occupied Ghent from October, 1914, to November, 1918, and from January, 1915, to July, 1916, Professor Heymans was allowed to work in his pharmacological laboratory there. During this period he investigated the effects of heat and cold, hyperthermy and hypothermy, on the mammalian organism, using a new method whereby the heat or cold were applied directly to the circulating blood of the experimental animals, and he has recently published an account of his experiments, and the conclusion he draws from them, in book form.[1] The great majority of the hundreds of animals he used were rabbits; the new experimental method consisted in forming a communication between the carotid artery and jugular vein in the neck, warming or cooling the blood in a water bath as it passed from one vessel to the other through a special cannula. The normal rectal temperature of the rabbit is from 38.5° to 39.5° C.; it was found that a rectal temperature higher than 43° C. was fatal in a few minutes, and that death from cold would follow if the rectal temperature fell below 18° or 20° C. The blood itself was not appreciably injured at temperatures of 47° to 49° C., but fatal haemolysis set in at 50° to 53° C., with a marked eosinophilia (30 to 40 per cent.); the heart and lungs worked well at 43° to 44° C., and Professor Heymans concluded that death from hyperpyrexia comes through the brain, while death from cold is due to failure of the heart and respiratory muscles to carry on. In the fatal hyperpyrexia produced by warming the blood he found that the temperature of the body fell as soon as death occurred and the experiment ceased; there was no further rise in this temperature *post mortem*. At high temperatures the heart beats regularly, forcibly, and rapidly; at low temperatures—in one case with an intracardiac temperature of 22.3° C.—the blood pressure fell and the pulse became infrequent, anacrotic, and irregular. Between 30° and 42° C., however, there was little or no change in the blood pressure; the output of the heart increased steadily as the rectal temperature rose; and the respirations might increase from the normal 50 or thereabouts to 150, 300, or even 420 per minute, with only a small increase in the amount of CO_2 expired, though here considerable variations were found in accordance with the greater or less muscular exertions made by the experimental animal. In general, the output of CO_2 doubled between 32° and 42° C. If the brain only and not the rest of the body were supplied with heated blood the respirations quickened enormously, but the rate of the heart beat was actually slowed. As for the kidneys, it appeared that they were unaffected by high temperatures; but glycosuria was seen when the rectal temperature fell to 34° or 35° C., disappearing when the temperature rose again to the normal. Many interesting observations and points for discussion will be found in the account of these experiments, for which there is no room in a brief notice such as this. Professor Heymans at the end of the work gives an interesting analysis of the similarities and differences presented by hyperthermia such as he produced and fever. He notes that in fever the animal organism makes no effort to combat the rise of temperature by augmenting its peripheral circulation, as it did in his experiments; and he concludes that the stability of the normal temperature is the resultant of the antihypothermic and antihyperthermic tonus. In normal conditions, the antihypothermic tonus, like the vasoconstrictor mechanism, is alone active, the antihyperthermic tonus, like the vasodilator mechanism, being normally inactive. Fever is thus to the normally stable temperature as vascular spasm is to the normal vascular tone.

[1] *Iso- hyper- et hypothermisation des mammifères par calorification et frigorification du sang de la circulation carotido-jugulaire anastomosée.* Par le Professeur J. F. Heymans. (8vo, pp. 216, with 29 figures.) Brussels: H. Lamertin; and Paris: O. Doin. 1919.

GENERAL LEONARD WOOD.

IT is announced that General Leonard Wood has been nominated as Republican candidate for the presidency of the United States. This remarkable man is, like M. Clemenceau, a member of the medical profession. A sketch of his career has already been given in these columns, but the story of his rise from the position of an obscure practitioner to be one of the commanding officers of the United States Army is so romantic that it may be told in fuller detail. General Wood's father was a country doctor and a veteran of the civil war. His distinguished son was born at Westchester, New Hampshire, on October 9th, 1860, but his boyhood was spent at Cape Cod. His first thought was to enter the navy, but his father wished him to follow his own profession. Accordingly, in 1880, young Wood became a student at Harvard, where he earned his living with the help of a scholarship supplemented by tutorial work. At the age of 24 he began practice in a Boston slum. A year later he passed the examination for the army medical service, coming out second in a batch of fifty-nine. As there was no vacancy in the regular army he entered as a contract surgeon in the war against the Apaches that had just broken out. He was in the thick of the Geronimo campaign in the South West, the fiercest of all the Indian wars. The troops were mounted, and Wood had no experience of riding. He was given an unbroken broncho, but he quickly mastered his steed, and on the first day rode thirty-nine miles through the roughest part of Arizona. He became lieutenant in command of troops of the fighting line, and for his gallantry received the highest reward given by the American Government. Wood, like his fast friend Roosevelt, was a noted athlete, and won fame as a football player. When Grover Cleveland was president he became the White House physician, and he continued in that office with him and afterwards with McKinley. At the time of the outbreak of the war with Spain Wood had nearly made up his mind to leave the army and try his fortune on a sheep ranch in New Mexico. The war brought him his chance. Roosevelt was offered the command of a regiment of rough riders; he refused to be colonel, but agreed to serve as lieutenant-colonel under Wood. Wood drew up the plans for raising the men, and in three weeks the rough riders were formed. A month after landing in Cuba he became a brigadier-general, and two months later he was Governor of

Santiago. Before the close of the year he was a major-general though not yet thirty-eight. As Governor he organized the administration of the young republic, established schools and courts of justice, stamped out yellow fever, and left the island cleansed and healthy. When Roosevelt became president Wood was sent to the Philippines, where for a year and a half he fought Moros through woods, swamps, mountains, and jungles; during all that time he was almost continually under fire. From the rulership of the province of Mindanas he went to Manila to become commander of the department of the Philippines, where he established law and order. All this was accomplished in three years. In 1903 he became a major-general, and in 1908 he was appointed Commander of the Eastern Department. He became Chief of the Staff of the United States army in 1910, and resolutely set himself to break the bonds of red tape. He preached the necessity of preparedness in season and out of season, especially urging the military training of boys in schools. In 1914 he went back to the command of the Eastern Department, and, when the National Guard was called up, out of the disorder of the Mexican situation he evolved a system and handled men and supplies with the utmost efficiency. General Wood held a high command in the recent war. He was wounded at the beginning of last year by the bursting of a gun during a test in France, but he is still an active force in his own country.

THE SERUM DIAGNOSIS OF BILHARZIASIS.

MAJOR N. HAMILTON FAIRLEY, of the Australian Army Medical Service,[1] brings forward good evidence for the belief that the harmful effects on the tissues produced by bilharzial parasites and their ova are principally due to the toxin excreted by them rather than to their merely mechanical action. In man naturally infected as well as in experimentally infected monkeys this is shown in two ways—there is an eosinophile leucocytosis and a corresponding increase in the eosinophile myelocytes in the bone marrow, and the serum shows the presence of immune bodies called forth to neutralize the bilharzia toxins. Major Fairley has succeeded in producing an antigen which is capable of demonstrating by the complement deviation reaction the presence of bilharzial infections. The antigen is an alcoholic extract of the infected livers of either of the snails *Planorbis boissyi* or *Bullinus dybowski*, which are the intermediary hosts of *Bilharzia mansoni* and *B. haematobia* respectively. Both antigens give the specific reaction, no matter which of the parasites is present in man, thus showing how closely allied the two species are. Extracts of the normal livers of *P. boissyi*, or of livers infected with another cercaria, failed to give the reaction, nor were pseudo-positive reactions obtained in protozoal, malarial, syphilitic, or other infections. The reaction would thus seem to be a true Bordet-Gengou phenomenon. It was found that positive results were obtained in 89 per cent. of patients whose infection was of not more than two years' duration, and in 74 per cent. of the more chronic cases. As a general rule the greater the degree of eosinophilia the stronger was the complement deviation reaction. Several hundreds of serums were tested. The method of Major Fairley has considerable diagnostic value in the early stages of the disease before localizing symptoms have developed, or in the later stages where the small numbers of ova in the dejecta escape detection. In several cases bilharziasis was first detected by the method and subsequently confirmed by cystoscopic examination or by the finding of the ova in the stools. The author also suggests that it might be found very useful in determining the endemic index of bilharziasis in the Nile Valley if such a scheme were ever undertaken, and, on the analogy of the Wassermann reaction, in estimating the results of any proposed intravenous medication.

[1] *Journ. Roy. Army Med. Corps*, June, 1919.

THE NERVOUS SYSTEM IN PERNICIOUS ANAEMIA.

THE term "subacute combined sclerosis" is applied to cord degenerations which commence as small isolated plaques, as a rule in the posterior columns, and by their confluence and the secondary degenerations following them ultimately produce a diffuse and extensive disintegration of the white matter. The causative factors are very varied; in fact, almost any chronic intoxication may be responsible. Within the last two or three years definite destructive lesions have been found in the brain also. Large as is the list of diseases productive of these lesions, yet it is a striking fact that pernicious anaemia furnishes about a third of all the cases. From clinical examination various estimations have been made of the frequency of involvement of the central nervous system in cases of pernicious anaemia; the highest estimation hitherto has been 50 per cent. Woltmann (*Minnesota Medicine*, August, 1919) has examined at the Mayo Clinic 282 cases of undoubted and otherwise uncomplicated cases of pernicious anaemia since 1916; of these, 150 cases were subjected to a detailed neurological examination, and no less than 80.6 per cent. presented indisputable evidence of destruction of the nervous parenchyma. Doubtless this high estimation is to be accounted for by the refinements of neurological technique within recent years. Subjectively some form of paraesthesia, such as numbness and tingling, was rarely missing; sensations of cold—local or general—burning sensation, stinging pains in the limbs, girdle pain, cramping of the calves, disturbances of smell, taste, or hearing, and inability to control the arms or legs, were a few of the subjective symptoms, and were often the means of inducing the patients to seek medical advice. Objectively the most striking disturbances were found in the pathologically altered reflexes, for example, the tendo Achillis and Babinski reflexes; the disturbance of deep sensibility, particularly of vibration and joint sensibility, was a specially marked feature, being found in 92 per cent. of cases. Superficial sensibility was found definitely impaired in over 42 per cent., being usually most evident over the legs and buttocks. Woltmann considers that an examination of the nervous system is of inestimable value as an adjunct in differentiating pernicious anaemia from other types of anaemia, and that it often forms an easy way out of a most perplexing situation.

THE INDIAN MEDICAL SERVICE.

THE Naval and Military Committee of the British Medical Association, at its meeting on September 16th, considered various criticisms of the new rates of pay for the Indian Medical Service which have been put forward by present members of that service. The Committee decided to seek an early interview with the Secretary of State for India, in order to ascertain the full effect of recent Army Instructions (India), and also bring to his notice the further points which have been raised.

WE propose to resume the Epitome of Current Medical Literature, which was suspended during the later part of the war, and the first issue will be published with the JOURNAL of September 27th. The Epitome is intended to supply the needs of those in general practice who have not access to many other medical journals. It is not proposed to make abstracts from all articles appearing but merely to select those which would seem to be of interest to those who are not specialists.

WE much regret to announce the death of Dr. Guthrie Rankin, consulting physician to the Dreadnought and Royal Waterloo Hospitals.

THE BRITISH ASSOCIATION MEETING AT BOURNEMOUTH.

THE annual meetings of the British Association for the Advancement of Science, interrupted for two years by the war, were resumed last week at Bournemouth. It is interesting to observe that the leading daily newspapers now devote considerable space to the reports of papers and discussions. The work done by scientists during the war and the promised revelation of their secret endeavours undoubtedly stimulated curiosity, but it is to be hoped that the interest excited will follow their work in times of peace. However catholic one's taste may be it is impossible to do more than select a paper here and there, as the time-table permits, and endeavour to follow the subjects. Few of the papers dealt with medical science.

Racial Types of Man.

On the first day of the congress Professor Arthur Keith, president of the Anthropological Section, delivered a most interesting address on the "Differentiation of mankind into racial types." Starting with a description of the racial characteristics of the Mongol, negro, and Caucasian or European, he unfolded the thesis that these differentiations depended on the functional development of the endocrine glands. Abnormality, tumour, or disordered action of the pituitary gland was associated with acromegaly, gigantism, eunuchoid condition of the body, or dwarfism. Physiologically the conclusion seemed justified that the pituitary was one of the main parts in the machinery of regulation of growth, and that it was directly concerned in determining stature, cast of features, texture of skin, and character of hair—all of which were marks of race. The Caucasian type showed the greatest predominance of the pituitary; the sharp face, strong superciliary ridges, prominent chin, bulk of body, and height of stature could best be explained in terms of hypophyseal function. The interstitial gland of the testicles evidently played a part in bringing about the robust manifestations of the male characters, and this sexual differentiation was more emphatic in the Caucasian than in the Mongol or negro types. The evidence of loss of suprarenal gland function, as shown in Addison's disease, led to the inference that at least part of the function of these glands was concerned with the clearing away of pigment, and to their action we might attribute the fairness of skin in the European. Again, malignant growth of the adrenals in children produced a premature sexual maturity with all its bodily characteristics, and a similar result followed disease of the pineal gland. The thyroid gland was perhaps the most important of all the organs of internal secretion from the anthropological point of view. Apart from its immediate function in manufacturing a substance which regulated the rate of combustion of the tissues, and which could be correlated with the selection and survival of human races, it had remoter morphogenetic effects on growth and the shaping of racial characters. Cretinism, myxoedema, achondroplasia, and mongolianism, were evidences of characters induced by the thyroid gland changes of disease, and the racial characteristics normally corresponding were dependent on the physiological action of thyroid secretion. The endocrine glands thus possessed a growth-controlling mechanism, and the respective parts played by each in their relation to the rest of the economy were dominated by hormones, which, according to the nature of the recipients on which they acted, brought about the endless variety in the relative development of racial and individual features.

Protein Metabolism.

The president of the Physiological Section, Professor D. Noël Paton, communicated a paper on "Protein metabolism," in which he traced the gradual development of our knowledge of the chemistry of the proteins, their part in the processes of growth and repair, and the specific action of their products of disintegration. Covering a wide field and compressing the many accounts of physiological and chemical observations to the utmost possible, the lecturer made his paper difficult of abstracting but did not rob it of its great interest. His pleasing introduction and still more eloquent peroration were a delight to all his listeners. In the same section, too, Dr. Waller gave a demonstration of an apparatus which recorded the emotional responses to various stimuli; fear, happiness, even curiosity on the part of the subject produced their responses on the moving point of light of the apparatus.

In the Subsection of Psychology Dr. W. Brown spoke of his experiences of hypnosis and mental analysis in the treatment of shell shock and other nervous maladies in soldiers. The recovery of lost memory, of loss of speech or hearing, and the restoration of the normal state in cases of extreme nervousness and hysteria, were some of the successes of hypnotic treatment.

HONOURS.

A SPECIAL Supplement to the *London Gazette*, dated September 9th, contains a list of awards for services rendered in connexion with military operations. The following medical officers are included:

C.I.E.

Lieut.-Colonels: J. B. Jameson, I.M.S. (ret.), S. J. Rennie, R.A.M.C. (ret.), and J. W. Watson, I.M.S., Major Leonard Hirsch, I.M.S., and Captain J. B. Hanafin, I.M.S.

C.S.I.

Colonel A. E. Tate, C.M.G., A.M.S.

C.B.E. (Military Division).

Major and Brevet Lieut.-Colonel (temporary Colonel) F. A. Fleming, C.I.E., I.M.S.

O.B.E. (Military Division).

Lieut.-Colonels: P. St. Clair More, I.M.S., J. J. Whitworth Prescott, D.S.O., R.A.M.C.

Major (temporary Lieut.-Colonel) J. K. S. Fleming, I.M.S.

Majors: G. D. Franklin, I.M.S., A. T. Frost, R.A.M.C., D. P. Johnstone, R.A.M.C., T. W. Minty, I.M.S., R. B. Nicholson, M.C., I.M.S., H. W. Pierpoint, I.M.S.

Captains (temporary Majors): A. F. Babonau, I.M.S., F. R. Coppinger, R.A.M.C., J. R. D. Webb, I.M.S.

Captains: W. A. Frost, R.A.M.C., T. B. Heaton, R.A.M.C. (S.R.), C. H. Smith, I.M.S.

Temporary Captains: James Cairns, R.A.M.C.(T.F.), S. K. Engineer, I.M.S.

M.B.E. (Military Division).

Lieutenant (temporary Captain) P. X. Godinho, I.M.S.

Military Cross.

Captain R. R. M. Porter and temporary Lieutenant Mahomed Nawaz, I.M.S.

To be Brevet Lieutenant-Colonel.

Major N. W. Mackworth, I.M.S.

To be Brevet Major.

Captain (temporary Lieutenant-Colonel) J. V. Macdonald, M.C., I.M.S.

Captains (temporary Majors) E. E. Doyle and M. A. Rahman, I.M.S., C. Ryles, R.A.M.C., W. R. Stewart, I.M.S.

Captain J. A. A. Kernahan, I.M.S.

A special Supplement to the *London Gazette*, dated September 12th, announces the following appointments to the Order of the British Empire for services rendered during the war:

O.B.E. (Military Division).

Surgeon Commanders: G. E. Duncan, A. Gaskell, C.B., and H. W. Gordon-Green, R.N.

Surgeon Lieutenant A. G. L. Reade, R.N.V.R.

FOREIGN DECORATIONS.

THE following decorations have been conferred by the King of the Belgians for distinguished services rendered during the war:

Croix de Guerre. — Lieut.-Colonels (temporary Colonels): O. W. A. Elsner, C.B.E., D.S.O., and Langford N. Lloyd, C.M.G., D.S.O., R.A.M.C. Lieut.-Colonel G. J. Houghton, D.S.O., R.A.M.C. Major and Brevet Lieut.-Colonel (temporary Lieut.-Colonel) F. D. G. Howell, D.S.O., M.C., R.A.M.C. Captain and Brevet Major (acting Lieut.-Colonel) F. R. Laing, R.A.M.C. Captains (acting Lieut.-Colonels): J. M. A. Costello, M.C., R.A.M.C.(T.F.), John Rowe, M.C., R.A.M.C. Captains (acting Majors): J. D. Fiddes, M.C., R.A.M.C.(T.F.), H. A. Rowell, M.C., R.A.M.C. Temporary Captains (acting Majors): W. S. S. Berry, O.B.E., M.C., W. S. Danks, T. Ferguson, James Jack, M.C., and H. C. Watson, M.C., R.A.M.C. Captains: L. A. Dingley, R.A.M.C.(T.F.), Ivor R. Hudleston, D.S.O., R.A.M.C., Harold Seddon, R.A.M.C.(T.F.). Temporary Captains: G. E. Lindsay, M.C., C. W. B. Littlejohn, J. B. Mason, and J. C. Robb, R.A.M.C. Lieutenant (acting Major) L. S. C. Roche, M.C., R.A.M.C.

The French Government has conferred upon Dr. Gregory Lamb O'Neill the decoration of Officier de l'Instruction

Publique, in recognition of his valuable services rendered to the French community in New South Wales.

The President of the United States of America has conferred the Distinguished Service Medal upon Surgeon Vice Admiral Sir William H. Norman, K.C.B., R.N.

The President of the Portuguese Republic has appointed Surgeon Commander Percy H. Brogden, R.N., to be a Commander of the Military Order of Avis.

India.

INFLUENZA PRECAUTIONARY MEASURES IN MADRAS.

AT the instance of the Health Officer to the Corporation of Madras a special meeting of medical practitioners was held recently at the Medical College Hall. Lieutenant-Colonel C. Donovan, I.M.S., presided. The meeting was called to consider and combat the recrudescence of influenza in the city. The two waves of influenza in 1918 claimed a toll of 60.3 persons per mille, and now the city is passing through a third wave. It is regrettable that there were not in Madras many independent leagues or voluntary agencies as in Bombay and Calcutta. The chairman said that it had been decided that educative propaganda in the city was indispensable. Another essential thing was to avoid congestion. Hospitals should be opened by the corporation, which should allot large sums of money for the purpose, but as the corporation was poor the Government should come to its aid.

DEATHS FROM PLAGUE.

The following interesting table has been published, showing monthly mortality from plague recorded in India in 1918-19 as compared with the monthly mean for twenty years:

Months.	1918-19.	Mean for 20 Years.
July	3,972	5,934
August	6,174	12,340
September	6,945	21,607
October	7,632	27,750
November	4,697	27,481
December	3,205	35,808
January	7,629	51,549
February	12,872	64,875
March	15,069	101,100
April	10,221	99,436
May	6,104	54,656
June	1,182	10,259
Totals	85,700	512,711

Mortality per mille of population: 0.28.
Previous lowest: 0.42 in 1898-99 and 0.43 in 1908-9.
Previous highest: 4.51 in 1904-5.

The previous lowest mortality recorded in period July 1st to June 30th of following year was 119,045 in 1898-99; the previous highest mortality was 1,328,249 in 1904-5.

INDIA AND EAST AFRICA.

In a recent report referring to the East African campaign the Commander-in-Chief in India affords an insight into the climatic conditions with which the troops were faced. "The campaign," he writes, "had been a long and trying one, and disease had throughout taken a heavier toll than enemy's bullets. Although the strength of the Indian contingent had never reached fifteen thousand, and casualties in action had been comparatively few, over three times that number were sent from India during the course of the campaign."

COLUMBIA UNIVERSITY, New York, is about to establish a system of compulsory supervision of the health of its undergraduates. They will be examined physically on entering, and if necessary helped to get the best treatment. Each student will be further examined once a year, and will be required to learn at least two outdoor and two indoor sports.

Correspondence.

"THE CULT OF INDIVIDUALISM."

SIR,—The many inaccuracies and misstatements contained in the communication from Dr. E. R. Fothergill, published in your last issue, must be our excuse for requesting space for a brief reply. Seeing that no issue exists between the British Medical Association and the Federation of Medical and Allied Societies (late Medical Parliamentary Committee), of the former of which we are also members, we are not concerned with the defence of the body we represent.

In the first place we do not subscribe to the wholesale condemnation of the Association contained in the fourth paragraph of your contributor's letter. We cannot agree that the British Medical Association "is now recognized by all departments in the State as the mouthpiece of the profession," much as we would wish it to be; apart from the fact that the *Medical Directory* contains the names of twice the number of medical men that the membership of the Association embraces, there are several other professional bodies that the Government departments consult direct. The policy of the Federation can in no way be construed as making for rivalry with the Association; the aims of the former are definite in extent. It provides a permanent "round table" at which representative doctors, of all shades of opinion and engaged in all branches of medical work, may meet and confer with one another and with the representatives of lay bodies whose activities are ancillary to medicine; it aims at obtaining support for the profession from a much larger section of the public than any purely medical body can hope to obtain; it constitutes a "reference library" on matters affecting the public health, and by being in a position to supply information to the profession and the public, on the one side, and to those guiding legislation, on the other, it is truly a "liaison committee." Thus in place of overlapping and confusion in policy the Federation offers a real prospect of unity in thought and action.

Dr. Fothergill has a great deal to say regarding schisms in the ranks of the profession; it will therefore interest him to know that the three bodies he mentions and whose existence he deplores are amongst those who have taken part in the formation of the Federation, so that already far greater unity exists than was the case prior to the formation of the Medical Parliamentary Committee. It will be time enough to discuss the objection raised regarding individual subscriptions when the Federation asks for them.

It would be well if Dr. Fothergill could understand that there are others besides himself who are working disinterestedly for the good of the profession and the community.—We are, etc.,

MALCOLM MORRIS,
Chairman.
CHARLES BUTTAR,
Honorary Secretary.
N. HOWARD MUMMERY,
Organizing Secretary.

The British Federation of Medical and Allied Societies,
20, Hanover Square, W., Sept. 15th.

SIR,—I was highly interested in the letter from Dr. E. Rowland Fothergill in your issue of the 13th instant, to which for some curious and obscure reason he has given the title of "The Cult of Individualism," although it is difficult to understand how a tendency to create associations whose object, according to Dr. Fothergill, is to promote "greater union in the profession" can be regarded as evidence of individualism. This, however, is by the way, and there is no one who is interested in medico-politics and in the common good of the profession and of the community who can withhold sympathy from the desire expressed by Dr. Fothergill for the promotion of union in the medico-political activities of the profession and the elimination of schism.

Does Dr. Fothergill's appeal, however, to the individual members of the profession to withhold support from any other organization of the medical profession than the British Medical Association really help towards union, and still more help to secure from the profession the

maximum of interest in medico-politics possible to the profession? I doubt it.

So far as Dr. Fothergill deprecates the formation of new organizations whose activities and principles are identical with those of the old association (the British Medical Association) I am with him; but when a new association has been formed, with a new principle of organization which the British Medical Association will not or cannot subscribe to, and he appeals to individual members of the profession to withhold support from this new body, I join issue with him. Such a new organization has arisen in the Medico-Political Union, with the principle, new to the profession, that at least one organization of the profession should have the foundation of trade unionism; and for Dr. Fothergill to appeal to the individual members of the profession to withhold their support from it is not in the best interests of the profession. Indeed, so far as medico-political activity is concerned, it is suicidal.

Better far to have divided activities than the apathy towards medico-politics which existed so long as the British Medical Association was the sole organization to which members of the medical profession could look to voice their interests. This apathy is now somewhat removed, and there is a considerable, and, I believe, an increasing, interest taken by members of the medical profession even in the activities of the British Medical Association; but this decrease in apathy and increase in interest has progressed *pari passu* with the increase in the activities of the Medico-Political Union.

Can the medical profession do without the leavening factor of the Medico-Political Union? I do not believe it. Can the British Medical Association again afford to be without the stimulating influence of the Medico-Political Union, even as an apparently opposing force? I doubt it. I do not believe that Dr. Fothergill himself would like to have the profession back in its condition of medico-political apathy of the time prior to the Insurance Acts.

The tragedy is that the activities of the two bodies, the British Medical Association and the Medico-Political Union, should be so largely exercised in mutual opposition, and the tragedy is all the greater in that it is unnecessary. There is every reason why their activities should be co-ordinated except one, and that is the jealousy of a few members of the old organization of the activities of the new. The rank and file of the profession are keenly desirous of such co-ordination, and I am constantly receiving letters from members of the profession asking if the two bodies cannot be got to work together.

I believe that this is not impossible, and if Dr. Fothergill would help towards this, I should be heartily with him; but when he appeals to individual members of the profession to support the one body and withhold support from the other I am against him. I rather would appeal to individual members of the medical profession that they should support the British Medical Association *and* the Medico-Political Union.

I apologize for the length of this letter, but I ask you to publish it, not because it gives my views, but because I believe it gives the views of a considerable and increasing number of the members of the medical profession. — I am, etc.,

York, Sept. 15th. PETER MACDONALD.

INTRAVENOUS INJECTIONS OF GUM SOLUTIONS IN CHOLERA.

SIR,—In your issue of June 7th last Professor Bayliss advocates, with good reason in view of his valuable work on gum solutions in shock, that a trial should be made of their intravenous injection in cholera, with a view to obtaining a more prolonged maintenance of the blood pressure than sometimes follows the use of hypertonic salines. Last year Professor Bayliss kindly sent me a copy of his paper on gum solutions in shock, and in acknowledging it I informed him that I had previously read it and been so struck with the possibilities of the method being of great value in the very severe cases of cholera which repeatedly collapse and are sometimes lost, in spite of hypertonic salines, that I had lost no time in trying it, but unfortunately with very disappointing results. This letter apparently did not reach Professor Bayliss, probably on account of "enemy action."

With one exception, the cases in which I tried the gum solution were rather below the average severity, as is commonly the case in the rainy season, when the trial took place; yet several were lost which I should have expected to have recovered under hypertonic salines. Still more striking was the fact that instead of the great relief, often resulting in sleep before the hypertonic saline injection is finished, the gum solutions were followed by increasing distress, difficulty of breathing and cyanosis, which soon compelled me to abandon their use. In view of the shortness of my trial I decided not to publish my results at once, in the hope that others might be more successful, but I have now learnt that my friend Lieut.-Colonel A. Leventon, I.M.S., has extensively tried gum solutions in accordance with Professor Bayliss's method at the Campbell Medical School Hospital, Calcutta, where well over one thousand cases have been treated in the first half of this year; and Colonel Leventon has authorized me to state that with various strengths of the purest gum arabic up to 7 per cent. his results have been in entire agreement with mine, and he has also had to abandon the method. He, too, noted the same distress and cyanosis which I saw, and the unexpected loss of not very serious cases under the treatment; clearly indicating that gum solutions do not meet the physiological needs of cholera cases.

I confess that this failure has been a great disappointment to me, but I believe the explanation to be that the gum solutions lead to the retention in the circulation of the deadly cholera toxins, which are absorbed from the bowel in increasing quantities with the restoration of the circulation by intravenous injections of large quantities of salt solution, with or without gum, but which are usually sufficiently rapidly re-excreted through the kidneys and bowels after hypertonic saline to avoid dangerous accumulation in the blood. The fact that I found salines made up with freshly distilled water produced febrile reactions, indicating that the fever was due to toxin absorption, lends support to this view.

There is still room for considerable improvement in the treatment of the most severe toxic cases of cholera, but the hopes which Professor Bayliss's researches in shock led me to expect from gum solutions in cholera have been disappointed. I have for long thought that the most promising line of advance is the use of anticholeraic serums, such as those formerly made by Salimbeni in Paris and Schurupow in Russia, but which I have not yet been able to obtain facilities for making in Calcutta owing to the war. Perhaps one of the hill laboratories of India could take up this important line of work and send the serum to be tested in Calcutta in addition to my system of treating cholera.—I am, etc.,

Calcutta, Aug. 9th. LEONARD ROGERS.

DISORDERED ACTION OF THE HEART.

SIR,—In his interesting paper on this subject in your issue of September 13th Dr. Venning provides tables the significance of which is not clear; I refer to Tables VI and VII, headed respectively "Causation" and "Varieties of Infection causing D.A.H." At first sight Table VII seems to record the percentage frequency of certain antecedent conditions among men suffering from D.A.H., which would be valueless without a statistical control based upon, say, a random sample of the military population. For example, scarlet fever provides in the last six-monthly period 2.2 per cent. of the causative infections (themselves 22.4 per cent. of the total); so that the incidence of scarlet fever as an antecedent is 0.49 per cent.—surely less than its incidence among the ordinary population.

The table probably represents the writer's judgement as to causes, and he tells us that by far the greater number shown in it were infections in civil life. One would like to know how many of the cases were due to such infections, how long after infection the symptoms appeared, and what are the grounds for regarding the infection as the cause of the D.A.H.

Dr. Venning rightly concludes that the mental and physical strain of warfare is the chief cause of the symptoms, but credits to it only some 30 per cent. of the cases, and though "neurosis before enlistment" provides a respectable percentage of causes, yet "neurosis after enlistment," which is only too common, receives no statistical acknowledgement.

My experience differs from that of Dr. Venning in so

far as I have seen these men only at a later stage of the condition, and I venture to trouble you with some remarks upon the etiology of D.A.H. which have no pretensions to numerical exactitude:

1. Many cases have occurred early in home service and under conditions where physical strain was unimportant. Others develop long after the strain has ceased.
2. As precedent diseases one often finds those, such as "gastritis," "myalgia," "laryngitis," etc., which are known to be in the army usually synonyms for a "neurosis."
3. Gas poisoning, so often regarded as the cause of D.A.H., is also the stated cause of many psychoneuroses.
4. Patients suffering from "neurasthenia" or "shell shock" frequently present the symptoms of D.A.H., which are, in fact, the usual accompaniment of the "anxiety state."
5. Cases of D.A.H. nearly always present nervous symptoms; headache, tremor of the hands, ready sweating, disturbed sleep, and jumpiness at slight noises are the commonest and mildest, though other symptoms may be so prominent that the case should be placed among the group mentioned in the last paragraph.
6. Many cases of D.A.H. do not tend to recovery even with months of easy conditions in civil life and when the physical signs are slight.

I must admit surprise at the number of cases with a history of rheumatic fever—about 10 per cent. of the total—that Dr. Venning has seen, and suspect the existence of a group which does not come under the notice of one whose observations are chiefly directed to the neuroses and psychoneuroses.

With this reservation I make so bold as to express the opinion that the syndrome known as D.A.H., which now incapacitates thousands of men, is a manifestation of emotional disturbance and not a result of infection. Emotion may interfere with the function of the central nervous system at any level; at the highest level it produces the psychoneuroses, which may show themselves by disordered motor activity or remain confined to the sphere of thought and feeling; at the lowest it disturbs the autonomic nervous system and affects the secretory and cardiac activities. This is shown clinically by the association with anxiety states of an "irritable heart," with slight enlargement of the thyroid, and von Graefe's sign. I dislike the word "neurosis," but would admit its application to symptoms, including D.A.H., caused by interference from emotional causes at this lower level of the central nervous system.

The practical importance of this view is immediate. The original cause of emotion may have vanished; but when a man believes he is suffering from "heart disease" a fresh source is opened out from which he derives new fears. His fears maintain the symptoms and the symptoms maintain his fears.

Anyone who, like myself, has become inclined to shirk the task of explaining to these men that they have no disease of the heart will appreciate the need of this point of view being emphasized.—I am, etc.,

Loughton, Sept. 15th. MILLAIS CULPIN.

STIFF KNEE IN RELATION TO COMPOUND FRACTURE OF THE FEMUR.

SIR,—Permit me to comment upon the article by Captain C. Beresford Alexander, R.A.M.C.(T.), in your issue of September 13th, on the pathology and treatment of stiff knee in relation to compound fracture of the femur.

He begins by stating that, apart from the fibrous or bony ankylosis of the knee following compound fracture of the femur when the fracture is into the joint or when there has been prolonged suppuration near the joint, there is another class of stiff knee which follows compound fracture of the shaft of the femur which is due to a shortened condition of the quadriceps muscle.

So far I am in entire agreement, but when he proceeds to explain this shortening by attributing it to sepsis and disuse I at once join issue, for whether or not such a case will have a stiff knee by the time bony union occurs depends upon the method of treatment adopted.

If it be treated in a straight Thomas knee bed splint, with strapping extension applied to the skin of the leg, a stiff knee will result, due the injurious effect of the prolonged and continuous strain upon the passive quadriceps. If it be treated in the modified Thomas knee bed splint, with added lower half devised by Watkin-Williams and with extension applied directly to the lower femoral fragment with Pearson's ice-tongs, the knee-joint can be flexed to a right angle and the quadriceps exercised daily without in any way interfering with the extension, which is still exerted in the line of the thigh, with the result that when bony union is firm almost complete range of voluntary movement is present in the knee, it never having been lost.

That sepsis is not the cause of the condition is proved by the fact that when a simple fracture of the femur is treated by the first named method, a stiff knee results.

I am informed that at the Alder Hey Hospital, the first—the old method—is in constant use, while the second—the new method—is not held in much favour. If this be true, it may account for the omission from Captain Beresford Alexander's article of any expression of regret or surprise at the occurrence of this stiffness; perhaps, indeed, he meets it in every case.

On the other hand, in the hospitals where the new method has been adopted the occurrence of stiffness is regarded almost as a disgrace.

Minor points which call for criticism in the article are:

1. The statement "that some degree of (knee) joint infection must occur in all cases of compound fracture (of the femur)." Will Captain Beresford Alexander explain why a compound fracture of the upper third of the shaft must cause it?

2. The advice to flex the stiff joint under gas. This is an unsatisfactory anaesthetic for the manipulation of stiff joints, and its use is liable to result in "rupture of the quadriceps, injury to the patellar ligament and capsule of the joint, or even fracture of the patella," accidents which Captain Beresford Alexander is careful to warn us against. Why not use chloroform and ether and take our time over it, with the patient completely relaxed, applying exactly as much force as we wish without the annoyance or danger of sudden powerful muscular efforts on the part of the patient?

The prevention and treatment of stiff knee is of such great importance to the owner of a fractured femur that I hope you will open your columns to a discussion upon it.—I am, etc.,

London, W., Sept. 13th. PAUL BERNARD ROTH.

THE TEACHING OF MIDWIFERY.

SIR,—The chief fact which emerges from the Report of the Committee on the Teaching of Gynaecology is that practical midwifery is badly taught. Of this there can be no doubt, and although lack of clinical facilities may be an important factor, there is another to which attention should be directed. It is an anomaly that whilst the teaching of medicine and surgery is conducted by men whose practical experience of their subject is large, the teaching of practical midwifery is performed by men whose practical acquaintance with their subject is small. It would be interesting to know how many labours the average teacher of midwifery in London has personally conducted. I am sure the number is small, and in no case comparable to the thousands which stand to the credit of many general practitioners. If further evidence is needed of this assertion, it can be found in the textbooks of midwifery. A perusal of almost any one of these will convince an experienced man that most of the methods advocated are those of an academical tradition rather than begotten of a large practical experience.

The conditions under which the vast majority of children are born are what they are, and such they will remain for several generations, and what is wanted is a meticulous teaching—by men who are practically acquainted with these conditions—of the very best way to turn them to the safety and comfort of the patient. To shave and prepare an expectant mother as for a serious abdominal operation, to surround her, at the appropriate time, with three superior beings clad in aseptic raiment and wearing sterilized rubber gloves, who will superintend with sedulous care the expulsion of that impertinent foreign body, the newborn baby—this is, no doubt, a charming spectacle, but it bears as much relation to the practice of midwifery as Utopia to the United States.—I am, etc.,

Wanstead Park, Sept. 14th. A. CAMPBELL STARK.

THE MILEAGE FUND.

SIR,—From inquiries that I have received it would appear desirable to state once more as clearly as possible what is the present state of the mileage question—so far at least as I understand it.

Two main principles were laid down by the Insurance Acts Committee for the constitution of the travelling or mileage fund:

1. That practitioners were to have extra remuneration for the extra time and money expended in visiting country patients, over and above what is involved in attending patients in towns and is covered by the ordinary capitation fee.

2. That this extra remuneration is under ordinary circumstances to be for patients more than two miles from the practitioner's house.

These two principles have been accepted (in the alarmingly obscure language, it is true, to which all Government officials seem addicted, but I am assured without any *arrière pensée*) in a letter from the Ministry of Health addressed to the Medical Secretary.

It has been agreed that the *distribution* of the mileage fund constituted upon these principles to the different areas should be worked out by a committee consisting of Government officials and members of the Insurance Acts Committee (exactly half of which, happily, are rural practitioners) and presided over by a neutral chairman nominated by the committee—namely, Sir Woodburn Kirby, past president of the Society of Accountants.

As regards the *assessment* of the fund, "so calculated as to take reasonable account both of the time occupied and of the expenditure incurred," to quote the words of the Ministry, it was tacitly assumed that the data in the hands of the Ministry of Health and of the British Medical Association would be placed before this committee in order that an agreement should be come to as to its amount; and though it does not appear upon the formal terms of reference, "the Minister proposes to invite the committee to examine all relevant data and memoranda bearing on the subject, and to give him the benefit of their advice and assistance in the matter."

The sum offered by the Government will be nearly as important to rural practitioners as the capitation fee will be to the profession as a whole. It is true that its non-acceptance by rural practitioners need not involve a general strike—such practitioners might refuse to go on the panel for patients beyond a certain distance only—but the inconvenience which such refusal would cause to the insured public, as well as the trouble which would devolve upon the profession in organizing a medical service on its own terms to meet the needs of these people, would be so great that every effort will be made, I am sure, by both sides to come to an agreement.

As has been long ago pointed out, the data for distribution of the sum agreed upon and for the assessment of this sum are for the most part identical, but one or two preliminary points may be mentioned.

1. As regards assessment, it must not be forgotten that in past discussions the extra hardships and responsibilities of the country doctors as compared with the townsmen have not been denied, but it has been agreed that these should be recognized, not by a difference in the general capitation fee as between the two classes of practitioners, but by allowing a generous travelling fund to the rural doctor.

2. The determination of the money value of the time spent in travelling obviously raises the question of what may be considered to be a reasonable annual income for a professional man working for ordinary hours a week, and this will have to be agreed upon.

3. For assessment, and probably distribution also, it will probably be necessary to divide up the practices throughout the kingdom into certain classes according to their character, such as (1) town practices with country surroundings, (2) country practices in residential districts, (3) village practices in agricultural districts, (4) moorland practices, and perhaps others; the number of each class will have to be estimated, and data collected from a sufficient number of samples to justify conclusions for the whole.

Bearing both assessment and distribution in mind as regards the actual expenses incurred, there are at least four main lines by which the problem of the travelling fund can be approached:

1. The average annual "stable expenses" (to use the old heading) of a practice (outside two miles) can be ascertained and the proportion which attaches to insurance practice determined. This might be decided in at least two ways—by finding (*a*) the proportion which the number of insured persons in a district bears to the general population, or (*b*) the proportion which the insurance fees bear to the gross income of the practice.

2. The cost of travel per mile, whether by motor, horse, or otherwise, might be arrived at, and the distance of each insured person from the practitioner's residence and the average number of visits paid per year being known, an estimate made of the cost per person. This is the unit system adopted by many committees for distributing the old Special Mileage Fund.

3. The average total number of miles travelled per annum for all patients and the average total number of visits paid to all patients in a practice might be ascertained, and the average number of "miles per visit" being thus known, the amount to be paid for for each insured person on the doctor's list could be determined.

4. Sample practices or districts could be marked out on a map, and the sparsity of population, number of miles of good roads, distribution of the villages and population, position of the doctor's residence and other factors being taken into account, practices could be classified according to the general expenses of travel, and each class could be assigned a definite additional capitation fee, or a lump sum per annum to cover expenses.

Each of these methods has advantages, whether of accuracy, practicability, facility, or the saving of book-keeping, and it seems clear that each will have to be explored to some extent if only to check the others. Clearly this is going to take any committee a considerable time, and it is probable that the inquiry may have to be prolonged over this autumn and the final arrangements made retrospective.

It would not be proper to endeavour to anticipate the sum necessary "to take reasonable account both of the time occupied and the expenditure incurred by country doctors"; it will be a large one, much larger, I think, than has been anticipated either by the former Insurance Commissioners or by the Insurance Acts Committee or by the country practitioners themselves who have not kept accurate accounts of their expenditure or gone closely into the figures of their practices. Of one thing I am sure—those of us who have wide practices have been accepting distant patients at a dead loss from the very commencement of the Act, and by postponing a resettlement till the end of the war have been consciously or unconsciously taxing ourselves for the benefit of the community to a very considerable extent.

Would it be too much to ask the Government to cancel the doles they have granted towards insurance practice expenses for 1919 and to make any arrangement come to as to the travelling fund applicable to this the first year of peace?—I am, etc.,

Weyhill, Hants, Sept. 9th. J. P. WILLIAMS-FREEMAN.

FLAT-FOOT.

SIR,—Lieut.-Colonel Henry Smith tells us, in the JOURNAL of September 13th, that the leg muscles "are merely intended by Nature to move the ankle-joints and the joints of the tarsus"; and that "the cause of the evil in flat-foot is to be found in the skeleton." Thirty years ago I wrote, as a motto for the title-page of my book, *The Human Foot*:—"Muscles, in effecting the functions, support the structure and influence the form." Ever since I have been insisting that muscular action forms the plantar arch and will restore it when destroyed. Will some one who speaks with authority tell us what is the teaching of surgical science?—I am, etc.,

Gloucester, Sept. 14th. T. S. ELLIS.

EARLY MENTAL HOMES.

SIR,—It was recently stated, in answer to a question in the House of Commons, that the provision of convalescent homes for early uncertifiable mental cases (without detention and on a purely hospital basis) would be a matter coming within the province of the new health authority. It is admitted that such homes or sanatoriums would be a great boon in intercepting cases (especially those occurring among ex-soldiers) which would otherwise be relegated to asylums.

The Lunacy Board (see its annual reports) has long desired the institution of "reception houses" under its wing, where early cases could be detained, say, for six months without certification—that is, without any judicial investigation or appeal, but solely on one medical authority—a proposal which might evidently lend itself to serious abuse.

A bill with this object, entitled the "Mental Treatment Bill," was introduced by the Home Office in May, 1915, but had to be withdrawn, the House of Commons regarding it as an annulling of the safeguards of the Lunacy Act and an infringement of the rights of the individual. From recent indications it would appear that a similar bill is now again in contemplation.

The Lunacy Board has, however, no jurisdiction over uncertified and uncertifiable persons, and in order that cases in the very early and most curable stages should be induced to enter these homes voluntarily (as they would enter a hospital) it is essential that the homes should have *no* connexion with lunacy, else they will be regarded as "half-way houses" to asylums, and shunned by the very people for whom they are intended. Public money, if sunk in them, will be for the most part entirely wasted.

It is a mistake to think that legislation is needed for the provision of sanatoriums which do not involve detention. The Public Health Act, 1875, has already conferred on borough councils the power to run hospitals, and similar powers could be readily extended to the London County Council and other county councils.

The cheering and hopeful atmosphere produced by the fact that the terms both of admission and stay are voluntary is in itself a most important factor in recovery. Section 315 of the Lunacy Act is a salutary safeguard, which should be strengthened and not annulled. It is not the existence of legal safeguards which causes "stigma," but the fact of being subjected to detention.

It is in the interest of the public that every case to which restraint is applied should be carefully investigated under judicial procedure, and that every case proved to be "dangerous and unfit to be at large" (see Section 74) should be judicially certified. No trivial or uncertifiable case ought to be subjected by any underhand method to detention.—I am, etc.,

London, W., Aug. 22nd. S. E. WHITE, M.B., B.Sc.

NEW NAVAL RATES OF PAY.

SIR,—I am in entire agreement with the letter of "M.O." in regard to the new pensions for naval medical officers. All medical officers of 50 or over are badly let down by the new scheme. The pension, which was looked upon as "deferred pay," was always the most attractive feature in our service. Medical officers used to have a rather better pension than other naval officers. The new scheme rates up pensions of all officers, excepting those of senior medical officers, which are relatively lowered.

A man of 40 or less has time, perhaps, to save a little money under the new scheme of pay, and has also time to make plans for going at 50, when he may still be young enough to take up practice, but to the older man there is no such opportunity. It is very hard, after serving for twenty-five years and going through the war and having for one's whole service looked forward to an adequate pension (pre-war about £550) as a certainty, suddenly to find one's pension reduced by £200, for certainly the new pension of £600 is not worth more than £350 at the present cost of living. If pension represents deferred pay, why is not the extra 5s. a day professional allowance also included in the pension?

I entirely agree with your correspondent that the words "maximum retired pay £600" should be removed from the Admiralty Order in dealing with the present list, for all medical officers of over 40 years of age, and this I consider only a bare act of justice.—I am, etc.,

August 30th. ANOTHER M.O.

PAY OF THE R.A.F.M.S.

SIR,—It was announced last July that the pay of the R.A.F. Medical Service would be the same as for the R.A.M.C. This latter has now been published, and I should like to inquire why a medical officer who has had to spend between £1,000 and £2,000 on his medical education should be paid 3s. a day as a lieutenant and 4s. a day as a captain *less* than the corresponding ranks in the R.A.F. who can receive commissions direct from school, without five years of special training. Their extra pay cannot be "flying risk" pay, as medical officers, together with all other officers in the R.A.F. (except quartermasters), will have to learn to fly as one of the conditions of being granted a permanent commission.—I am, etc.,

September 15th. CAPT. R.A.F.M.S.

REMUNERATION FOR 1920.

SIR,—I have received from the Secretary to the Kent Local Medical Committee a most interesting communication enclosing a reprint of a circular dealing with remuneration for 1920 issued by the British Medical Association.

In this reprint it is stated that the British Medical Association have information (which is presumably considered satisfactory since it is circulated to Panel Committees) that "the collected figures for attendances on discharged disabled service men show that an additional capitation fee of 2¼d. would have covered the insurance risk on all these men."

This figure is submitted without further explanation and, according to Dr. Cox in your present issue, was "supplied by the Government." To the poor panel practitioner this sort of talk is profoundly disquieting. He knows well enough that the number of persons paid for under "special arrangements applicable to discharged soldiers, etc.," is but a small fraction of those actually treated for war disabilities or actually in receipt of temporary or permanent pensions. He also knows that many practitioners, sickened with the interminable delays of payment, have not troubled to avail themselves of payment by special arrangements. To do so one has first to train the patient into the ways of obtaining blue cards, then to obtain his signature to this, that, and the other form, and finally to choose the appropriate moment for filling in and submitting one's own account. Even then the payment is made less 10 per cent. More inflation, I suppose. From my own experience I doubt if 2¼d. would cover the cost of stamps and notepaper used in connexion with these patients.

There are other interesting points in the reprint referred to. Thus, we are exhorted not to demand payment "out of proportion to the responsibility undertaken." This we can hardly do until we know what the responsibility is to be, and, since M. 25 is strictly unofficial and quite uninspired, we have as yet no idea what is to be asked of us.

Again, we are to ask only such a sum "as will not result in sums being paid to practitioners materially larger than those which would be required by alternative modes of remuneration." What are these other modes, and what would they cost? Perhaps we should prefer them if only we had some idea what they are.

Further, the sum asked is to be such as can be shown to be reasonable by a Health Minister addressing the House of Commons—a body which thinks it "reasonable" to cut down notification fees and abolish reports on factory accidents. Surely our aim is to be adequately paid for work done, and, failing that, to refuse to do it. Why, then, bow down to the sense of reasonableness of the House of Commons, in which the Health Minister's voice will be hardly audible above the sound of members congenially employed in the task of grinding their own axes or those of their constituents?

The same document tells us that as we shall have to give more time to each patient, we shall naturally have fewer on our lists. It is hard to see how any such consideration can reduce the numbers of insured persons (recently augmented by the inclusion of a new class) or increase those of panel practitioners. Yet one of these two must happen before the numbers on our lists are materially diminished.

One need say no more. The document is typical of a committee which despises the intelligence of the practitioner and cares but little what nonsense he is asked to consider, if only he can be persuaded to be quiet and leave the mighty on their seats. If the practitioner should venture to speak, a few gibes at the pestilential atmosphere of Kent are considered sufficient reply. Kent by no means stands alone, but, even if it did, history affords more than one warning against taking the county too lightly. But the eyes of the Insurance Committee are closed as their mouths are most assuredly open. Ichabod!—I am, etc.,

Sevenoaks, Sept. 13th. GORDON WARD.

THE FEE FOR A *POST-MORTEM*.

SIR,—By Act of Parliament a coroner may summons a medical witness to give evidence at an inquest, for which a fee of one guinea is paid; he may also order the witness to make a *post-mortem* examination, for which a fee of one guinea is also paid. If the medical witness

refuses he is liable to a penalty. The whole profession is aware of these facts; the British Medical Association is aware of these facts, and yet no attempt has been made by the Association to obtain a fee for these services commensurate with the risks to the doctor or their importance to the public. There is no need to point out to readers of the JOURNAL what these risks are, and the performance of a *post-mortem* examination, even under ideal conditions, is at best a loathsome and dangerous job. Taking into account the present value of money, it would not be too much to say that a fee of five guineas would barely represent an adequate amount of remuneration for this service. My reason for writing this letter, however, is to ascertain if possible why the British Medical Association—which presumably exists for the protection and promotion of our interests—has taken no steps for the repeal of those antiquated Acts of Parliament (William IV and Victoria) which fixed the fee at one guinea. The resentment of medical men against coroners' fees is very strong. Will the British Medical Association act quickly in this matter, or will it be necessary for some of us to become law-breakers by refusing to carry out the orders of the coroner and thus force the Association to demand redress?—I am, etc.,

Radcliffe, Sept. 14th. I. FLACK.

*** The Association in its evidence before the Departmental Committee on Coroners' Law in 1910 drew attention to the inadequate scale of fees for this work and supported the contention as strongly as it could. The Committee reported in favour of giving discretion to the coroner to pay expert fees. Several attempts were made before the war to induce the Government to bring in the necessary legislation, but without success. There has been no opportunity since the war, but the Parliamentary Committee of the Association is arranging to meet the Committee of Medical Members of Parliament to discuss future action.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

SIR,—Quite recently the Minister of Pensions, in answer to a question in the House of Commons as to whether the salaries offered for the posts of Deputy Commissioners of Medical Services under the Ministry of Pensions were sufficient to attract medical "men of the highest ability," stated that these salaries sufficed to attract "men of standing and capacity." He further stated that the salaries varied from £650 to £800 a year. This is a typical parliamentary reply. With one or two exceptions the salaries are £700, with no added Civil Servants' bonus and no apparent provision for improvement in scale. Further, they are not pensionable like other Civil Service appointments, and there is no fixity of tenure. £700 a year, one sapient Treasury official is understood to have said, is as much as any medical man is worth!

Now the duties of a D.C.M.S. under the Ministry of Pensions are varied, and are becoming increasingly responsible, and the personal qualifications needed to fulfil these duties efficiently are not slight. They include discretion in the selection of members of boards and the tactful handling of those boards. He is responsible for the assessment of the pensioner, and to his lot falls the adjustment of conflicting views on the part of the members. He has at the outset to establish a sympathetic atmosphere between the pensioner and the Board—many of these men come up in a suspicious frame of mind. He has to establish good relationship and co-operation with the Local War Pensions Committee, and has to deal with an increasing burden of administrative duties in connexion with the Ministry and his regional head quarters. Added to this the D.C.M.S. has to be a highly qualified man and must be professionally in touch with modern methods of diagnosis. He is either in control of a county area or a large town. The work is physically and mentally fatiguing and tends to become very monotonous.

The Service is bound to suffer if the responsibilities of the D.C.M.S. are not recognized by an adequate salary increasing in definite ratio to a maximum, and it is not surprising to hear that several capable men have, in so uncertain a prospect, resigned office. No doubt medical men can be got to fill any such vacancies, but in the end the quality of the work done and the Service are bound to suffer.—I am, etc.,

September 7th. Z.

SIR,—The letter written by Dr. S. J. Ross expresses views continually brought up by doctors who did not serve during the war. Those who did tell a different story.

He states that "the serving men in this area explained that army service was a holiday compared with general practice, and that a large proportion of their work might have been done by clerks"! This statement is certainly true in some cases; but would Dr. Ross prefer this relative holiday at army rates of pay or the rich financial fruits of a practice as busy as that he describes? With regard to the second part of the statement, does he prefer clerical work to medicine and surgery? If so, he made a mistake in the choice of his profession.

The majority of men in single practice who joined the army have been very hard hit, not only during their absence on service, but by the loss of goodwill. If the man who stayed at home will look at his books, he will notice an extraordinary increase in his takings since the war began. The man who went notices the converse. The inference is obvious.—I am, etc.,

Bournemouth, Aug. 26th. A. B. ROOKE.

SIR,—It is a pity that the deputation to the Minister of Pensions, reported in the SUPPLEMENT of September 13th, did not include under a *seventh point* the great discontent which is prevalent among the members at the absurd irregularity of the sessions. A man with a practice is seriously inconvenienced, and a man without a practice, like myself, is hopelessly placed. It is quite impossible to get other work to fit in. To have a few sessions in the forenoon one week, and the following week to have them in the afternoon, and perhaps even on different days, is most annoying. No one except a doctor would submit to it. Many, of course, have gone, the others grumble and remain, and the worst of it is that those who are to blame also remain.—I am, etc.,

September 16th. GALLERY.

Medico-Legal.

"BEAT HAND" UNDER THE WORKMEN'S COMPENSATION ACTS.

IN our issue of February 2nd, 1918, we dealt with a question raised by a reader as to whether under the Workmen's Compensation Acts there was any difference in procedure between miners and other industrial workers suffering from "beat hand" (subcutaneous cellulitis of the hand). We then stated that inasmuch as this disease was scheduled to the Act for miners, miners and miners only were enabled to take advantage of the procedure under Section 8 of the Workmen's Compensation Act, 1906, under which workers suffering from certain scheduled industrial diseases acquire a prima facie right to compensation on obtaining the certificate of the certifying surgeon, and any other worker suffering from this disease must go before the county court judge in the ordinary way and establish to the latter's satisfaction that his condition is the result of an accident arising out of and in the course of his employment.

Subsequently, on October 29th, 1918, this very point came before the Court of Appeal in the case of Wilson *v.* Blyth Shipping and Dry Docks Company, Ltd., to which our attention has recently been directed by a correspondent. From the report which has just been published it appears that the workman, Wilson, had been employed by the Blyth Shipping Company as a riveter's "holder up," his work consisting of knocking rivets into holes and holding them against the hammering of the riveter. He became affected with "beat hand" and procured a certificate to that effect from the certifying surgeon appointed under the Factory and Workshops Act, 1901. In the proceedings which the man commenced in the county court his employers denied liability on the ground that not being a miner his disease was not scheduled as an industrial disease under Section 8 of the Workmen's Compensation Act, 1906.

Section 8, Subsection (i), of that Act provides that where the certifying surgeon appointed under the Factory and Workshops Act certifies that the workman is suffering from a scheduled disease, and the disease is due to the nature of any employment in which he was engaged during the twelve months previous to his disablement, he shall be entitled to compensation as if the disease were a personal injury by accident arising out of and in the course of his employment. By Subsection (ii) of the same section it is further provided that if the workman at or immediately before the date of disablement was employed in any process mentioned in the second column of the schedule, and the disease contracted is the disease set opposite such

process, the disease shall be deemed to have been due to the nature of that employment unless the employer proves to the contrary.

The county court judge upon these subsections held that Subsection (ii) conferred an additional benefit upon certain trades, but that Subsection (i) was of universal application, and accordingly made an award in the man's favour. His employers appealed to the Court of Appeal, where, in delivering judgement dismissing the appeal, the Master of the Rolls said, "In my judgement the description of the disease is not limited to its occurrence in persons engaged in a particular process. The only object of referring to the process is because, in the case of a workman suffering from the disease and engaged in that process, the disease is to be deemed to have been due to the nature of that employment unless the employer proves to the contrary."

The case is one of some practical importance to the profession as showing that a certifying surgeon under the Factory Act should look to the nature of the disease from which a workman is suffering, and that if it is one which has been scheduled to the Workmen's Compensation Act, the nature of the workman's employment is immaterial so far as the surgeon is concerned.

Obituary.

THOMAS PICKERING PICK, F.R.C.S.ENG.,

Consulting Surgeon to St. George's Hospital; His Majesty's Inspector of Anatomy in England and Wales.

By the death on September 6th, in his 79th year, of Mr. Pick there has passed away one of the old school of hospital surgeons, who was a great figure in the surgery of the metropolis thirty and more years ago. Mr. Pick was born in 1841, the son of the late Thomas Pickering Pick of Liverpool, merchant. Coming up to London in 1857 he attended the courses of study at the Royal Institution, and entered St. George's Hospital in the winter session of that year. At this time the hospital occupied a very good educational position in London, and the surgical staff comprised such great surgeons as Caesar Hawkins, Tatum, Prescott Hewett, and George David Pollock, while Mr. Timothy Holmes was curator and surgical registrar.

Pick took the usual double qualification of his day, the M.R.C.S.Eng. and the L.S.A. in 1862, was house-surgeon in 1863, and proceeded to the F.R.C.S.Eng. in 1866. He was surgical registrar and demonstrator of anatomy from 1864 to 1866, and curator of the museum 1866–69. In 1869 he was elected assistant surgeon to the hospital, and in 1878 surgeon. He held this office for the full period of twenty years, and became consulting surgeon in 1898. Other hospitals with which he was connected were the Belgrave Hospital and the Victoria Hospital for Children, and he was also consulting surgeon to the Home for Incurables in Maida Vale.

Pick's connexion with the Royal College of Surgeons was a long and honourable one; he examined in anatomy for many years, and continued to be a member of the Court of Examiners till 1894, in which year he was Hunterian Professor. He also rose to the dignified position of Vice-President of the College. As author and editor Pick wrote a good deal; he edited *Gray's Anatomy*, tenth to fourteenth editions, single-handed, succeeding his old friend Timothy Holmes, and he continued to edit this famous book in conjunction with Professor Howden until recently. He also edited *Holmes's Principles and Practice of Surgery*, and was the author of a small handbook on fractures and dislocations, and a manual of surgery.

For many years he was Inspector of Anatomy in England and Wales. Mr. Pick retired in 1900, and lived at Great Bookham; two of his sons entered the profession, the younger of whom is a surgeon lieutenant commander, R.N.

ARCHIBALD HENRY HOGARTH, M.A., M.D., B.CH.OXON.,

Major, Queen's Own Oxfordshire Hussars; Medical Officer of Health for Buckinghamshire.

We greatly regret to record the death, on September 5th, at Quainton, near Aylesbury, of Dr. Archibald Hogarth, medical officer of health and school medical officer for the county of Buckingham, and examiner in public health at the University of Oxford.

Archibald Henry Hogarth was born at Oxford in 1877. He went from Westminster School to Christ Church, Oxford, with a classical exhibition in 1896. From Oxford he went to St. Bartholomew's Hospital, where his outstanding abilities and character were recognized by all. After obtaining the English Conjoint diplomas and graduating M.B. and B.Ch.Oxon. in 1904, he became house-physician to Dr. Samuel Gee, and edited the *St. Bartholomew's Hospital Journal* for two years. A most indefatigable worker, he never spared himself, and almost seemed to have the capacity of being in two places at once. He acted for some time as assistant medical officer to the Port of London, and, turning his attention to housing, he presented comprehensive reports to the Mansion House Committee on Housing, of which for some time he acted as secretary. His M.D. thesis in 1908 was entitled "The present position of the housing problem in and around London." Soon after leaving St. Bartholomew's he joined the London County Council educational staff, and worked with much energy to establish legislation on school hygiene; he made his mark with an authoritative book on the medical inspection of schools, published in 1909. Later, on the institution of a county medical officership for Buckinghamshire, he developed the various sanitary schemes throughout that county and adapted them to rural districts, particularly in regard to the dental care of children, cleanliness, maternity and infant welfare, and the control of venereal disease. He was an admirable organizer, and inspired all who came in touch with him with something of his enthusiasm and progressive spirit.

Whilst an undergraduate he served during the South African war with the Queen's Own Oxfordshire Hussars, and gained the D.C.M. Again, on the outbreak of war, he was mobilized with his regiment and went to France in September, 1914, as regimental surgeon. He took part in the first battle of Ypres, and remained on the Western front through the first winter of the war, but was invalided home with pleurisy in the spring of 1915. He went back to France in the following August, and spent a second winter there, holding the post of D.A.D.M.S. He was promoted major in July, 1916, and on his return to England he was appointed sanitary officer to the Southern Command. In the early part of 1917 he was sent to Switzerland to report on the condition of interned British prisoners of war. He was transferred to the medical branch of the Royal Flying Corps in April, 1918, and spent the summer visiting aviation centres. Last October he went on a special mission to inspect the naval air stations in the Ægean, but when he arrived influenza was raging in the islands. He took charge of the medical arrangements during the epidemic, and worked day and night. In recognition of his services in the Eastern Mediterranean he was awarded the O.B.E. During the voyage home he contracted Vincent's angina, from the effects of which he never recovered.

In public health administration and in all other matters Hogarth collected his information and facts carefully, and examined questions with thoroughness and scientific method. He was firmly convinced of the importance of appointing local practitioners as district medical officers of health or school medical officers, and the conferences he held with the district medical officers of the county were valuable in many ways. All who were associated with him in his work had a high regard and affection for him. In preparing a scheme or framing a policy he discussed each point with the officer at the head of the department concerned and weighed every aspect of the matter under consideration. Hogarth had a great contempt for shams or pretence. Having made up his mind, he went forward in his own single-minded, strenuous way. Thus he accomplished much in a short life, and whether in peace or war he always fought the good fight. The singular charm and sincerity of his character were felt by all who knew him. His untimely death is a loss to medicine and more especially to the public health service.

Dr. Hogarth in 1915 married Margaret Macdonald, M.B.Aberd., formerly medical inspector of schools under the London County Council. Deep sympathy is felt with his widow and only son.

The news of the death of JOHN CAHILL, M.D. F.R.C.S.Eng., on September 6th, at Pinckney's Green will have come as a shock to a large circle of friends. He had been in indifferent health for the past year or more, and the death of his only son, Captain J. Archibald Cahill, M.C., in action was a very great blow to him. Dr. Cahill was the son of the late Thomas Cahill, M.D., of 9, Albert

Terrace (now 88, Knightsbridge). He was born in 1857, and was educated at Beaumont College and St. George's Hospital. He took the "Colleges" in 1881 and the F.R.C.S.Eng. in 1884, and, having held the usual junior appointments at St. George's, he began private practice at 12, Seville Street, Lowndes Square, where he remained for the rest of his life. In 1897 Dr. Cahill proceeded to the M.D.Dunelm. He was for a time surgeon to the Hospital of St. John and St. Elizabeth, and during the war he acted as temporary assistant physician at St. George's Hospital. Doubtless the strain of this extra work was very great, but he refused to give it up, and continued to see the out-patients on his days until this summer. Dr. Cahill was also a member of the Egyptian Government Medical Commission (London Board), and he was a governor and for many years a member of the House Committee of St. George's Hospital, at the meetings of which body he was a very regular attendant; he was a good man of business, an effective speaker, and his arguments always carried weight.

MR. SKENE KEITH, M.B., F.R.C.S.Edin., died on August 19th, after a week's illness, of pneumonia contracted in the course of his work. Mr. Keith, although not much in the public ken, had achieved great success as an operating gynaecologist. His death, coming so soon after that of his brother George, who succumbed to the same malady last December when on active service at Bordighera, is a loss to the profession as well as to the many friends who knew and loved him. Both brothers had inherited the diagnostic acumen and manual dexterity of their father, the late Dr. Thomas Keith, one of the pioneers in ovariotomy. It is many years ago that Mr. Skene Keith published his first hundred cases of ovariotomy with a mortality of rather less than 3 per cent., and his success grew as time went on. He came to London while still a young man, and was appointed on the staff of the Samaritan Hospital, but he resigned his post and returned to Edinburgh to assist his father, though ultimately both father and son came to London and practised in Charles Street, Berkeley Square. Mr. Keith published an excellent treatise on *Gynaecological Operations*, and another on *Abdominal Surgery* in collaboration with his brother, Dr. George Keith.

COLONEL HUGH CHAMPNEYS THURSTON, C.B., C.M.G., R.A.M.C. (ret.), died at St. Margaret's, Babbacombe, Devon, on August 17th, aged 57. He was born at Thornbury, Gloucestershire, on March 14th, 1862, educated at St. Bartholomew's Hospital, took the M.R.C.S. and L.R.C.P.Lond. in 1884, and entered the R.A.M.C. as surgeon on February 5th, 1887. He became major on February 5th, 1899, lieut.-colonel on June 13th, 1911, and colonel on March 1st, 1915, retiring after the end of the war on March 1st, 1919. He served in Burma in 1891, with the Wuntho Field Force, receiving the Indian frontier medal with a clasp, and throughout the South African war, 1899–1902, receiving the King's and Queen's medals and also the C.M.G. He served during the European war, and received the C.B. on June 4th, 1917.

SURGEON-LIEUT.-COLONEL RICHARD FRANCIS TOBIN, R.A.M.C.(ret.), died recently in Dublin, aged 76. He was born on July 28th, 1843, educated in the schools of the Royal College of Surgeons, Ireland, and the Catholic University, Dublin, and took the L.K.Q.C.P.I. and L.R.C.S.I. in 1864, also subsequently the M.R.C.P.I. and F.R.C.S.I. in 1882. He entered the army as assistant surgeon in 1865 and retired with an honorary step as brigade surgeon on July 29th, 1885. In the old regimental days he served in the Royal Artillery, and for the last few years of his service was assistant professor of military surgery in the Army Medical School at Netley. He served in the Sudan expedition of 1885, at and in front of Suakin, receiving the medal with a clasp and the Khedive's bronze star. After twenty years' service in the army he started on a new career, which was to last over thirty years, in civil life in Dublin, where, soon after his retirement, he was appointed surgeon to St. Vincent's Hospital. He was also a Fellow of the Royal Academy of Medicine, Ireland, member of the governing body of the Catholic University School of Medicine, secretary to the Board of Superintendence of Dublin Hospitals, and H.M.'s inspector of anatomy for Ireland and surgeon in ordinary to H.E. the Lord Lieutenant. He had also been examiner in surgery to the Royal College of Surgeons, Ireland, and president of the Irish Medical Association. He was the author of *A Synopsis of Surgery* and of many contributions to the medical press, including "The Surgery of the Suakin Expedition," in the *Transactions of the Royal Irish Academy of Medicine*, vol. iv. His only son, Captain Patrick Tobin of the Dublin Fusiliers, was killed at Suvla Bay in 1915. Whether in the army, or in civil life, few men have ever been more universally and deservedly popular with all around him than was Dick Tobin.

MAJOR EDMOND WILLIAM ST. VINCENT RYAN, R.A.M.C. (T.F.), died recently from illness contracted on active service. He was educated at Queen's College, Cork, and at Dublin, took the Scottish triple qualification in 1888, and, after filling the post of senior clinical assistant at the Royal Westminster Ophthalmic Hospital, went into practice at Wandsworth Common. He served in the South African war as surgeon-captain in the City Imperial Volunteer Mounted Infantry, was present in the operations in Cape Colony and in the actions at Paardeberg, Driefontein, Johannesburg, Diamond Hill, and Wittebergen, receiving the Queen's medal with six clasps, and also the freedom of the City of London, and the honorary rank of captain in the army from December 1st, 1900. Before the war he was medical officer, instructor, and lecturer to the Volunteer Ambulance School of Instruction and a member of the Territorial Medical Association. He held a commission in the R.A.M.C.(T.F.) as major in the First City of London Field Ambulance, dated January 9th, 1909, and had been senior medical officer of the Public Schools Brigade.

DR. MENDEL FREEDMAN, of Whitechapel, died on August 15th, at the age of 52. Born in Russia in 1867, he obtained a medical degree at the Kieff University in 1894, and practised in Russian towns and villages till 1905, when he emigrated to England. He obtained the Scottish Conjoint diplomas in 1910, and began practice in Whitechapel Road, where he continued until his death. During the war, after the conclusion of the Anglo-Russian Military Convention, he was chairman of the Russian Medical Board, where he did a great deal of hard work. His practice was mainly amongst the poor of East London, towards whom his attitude was one of consistent idealism. Countless times he declined to take fees from poor patients, and worked incessantly to relieve the sufferings of others without regard for his own health. He died of heart failure at his surgery.

DR. ALBERT GOUGET, professor of pathology and general therapeutics in the University of Paris, was recently run over by an automobile and so severely injured that he died a few days later. He had been appointed to the chair only two months before. Dr. PAOLO DE AGOSTINI, surgeon to the Ospedale Maggiore, Milan, was recently killed in a motor accident. It is reported from Geneva that Dr. LINDMANN, editor of the *Münchener medizinische Wochenschrift*, was among the hostages recently executed by the Spartist revolutionaries. Dr. NIKOLAUS BEREND, professor of children's diseases in the University of Budapest, was killed recently during an attempt to overthrow the Soviet Government in the Hungarian capital.

PROFESSOR LUIGI LUCIANI, the distinguished Italian physiologist, died on June 23rd. He was born at Ascoli-Piceno in 1840, and studied medicine at Naples and Bologna, where he graduated in 1868. From 1872 to 1874 he worked at Leipzig under Ludwig. From 1875 to 1880 he taught general pathology at Parma. He was professor of physiology at Siena from 1880 to 1882, at Florence from 1882 to 1893, and at Rome from 1893 to 1917. He was for two terms of five years a member of the Superior Council of Education; in 1905 he was made a senator, and for two years was rector of the University of Rome. He was a member of most of the principal medical and scientific societies of Europe—the Medical Academy of Rome, the Royal Academies of Turin and Naples, the Leopold-

Caroline Academy, the Royal Medical Academy of Belgium, the Neurological Society of London, the Medical Society of Vienna, the Academies of Science of Goettingen and Amsterdam. A distinction which he especially prized was the Fellowship of our Royal Society. His research work dealt mainly with the heart, the cerebral cortex, the cerebellum, and the physiology of fasting. His treatise on human physiology, now in its fifth edition, has been translated into English, German, and Spanish. He was a great teacher, and from his laboratories have come many of the men holding chairs of physiology, pharmacology, and neurology in the universities of Italy.

DR. HIPPOLYTE BERNHEIM, who died recently, was born at Mulhouse in Alsace in 1840, and studied at Strasbourg, where he became agrégé in 1869. He was appointed professor of clinical medicine at Nancy in 1879, where, under the influence of Antoine Liébault, he took up the study of hypnotism and suggestion. His views and experience were embodied in his works *De la Suggestion et de ses applications à la thérapeutique*, published in 1886, and *Hypnotisme, suggestion et psychothérapie*, which appeared in 1891; a third edition was published in 1901. He was also the the author of *Leçons de clinique médicale* (1877), *L'hystérie* (1913), and *Automatisme et Suggestion*, which appeared in 1918. Bernheim was the chief of the Nancy school, the cardinal doctrine of which was suggestion as opposed to hypnotism, of which the Paris Salpêtrière was for long the sacred shrine with Charcot as its high priest. Bernheim has been called the father of psychotherapy.

PROFESSOR AUGUSTE TAMBURINI, one of the leading psychiatrists in Italy, has died at the age of 71. In 1876 he was appointed director of the asylum for the insane at Voghera and had charge of the clinic of mental diseases in the University of Pavia. In the following year he became director of the asylum at Reggio and professor of psychiatry and neurology at Modena. He held these posts till 1905. During that period he made Reggio the principal centre of psychiatric teaching in Italy. Under his direction the *Revista Sperimentale di Freniatria* became one of the leading organs of the speciality; among his collaborators were Golgi, Luciani, Morselli, and Lombroso. In 1905 Tamburini was called to the chair of mental diseases in the University of Rome. He was for twenty-four years president of the Società Freniatrica.

The Services.

ARMY MEDICAL SERVICE.

NEW RATES OF PAY FOR REGULAR OFFICERS.

ON September 13th a Royal Warrant was issued by the War Office as an Army Order, announcing the new rates of pay, half pay, and retired pay for officers of the regular army. The new rates and conditions take effect as regards pay, half pay, and allowances from July 1st, 1919, and as regards retired pay from April 1st, 1919. The new rates are granted in consideration of the present high cost of living, and will be subject after five years to revision either upwards or downwards to an extent not exceeding 20 per cent. according as the cost of living rises or falls. After July 1st, 1924, a further revision may take place every three years.

Where transfer from the old rates of pay and allowances to the new rates involves loss of emoluments the officer may continue in receipt of the old rates until by promotion or otherwise the new rates equal or exceed the old. The new rates will not be taken into account in assessing gratuities under Article 497, Pay Warrant; under the Royal Warrant, February 10th, 1919; or in accordance with the terms of any special contract in connexion with service during the great war. Where dependent upon rates of pay these gratuities will be calculated on the rates in force before July 1st, 1919.

For all officers drawing the rates of pay and allowances laid down in the new Warrant the army of occupation bonus is abolished, while as from January 1st next children's allowance will be abolished for all officers, whether drawing the new or the old rates. The existing rates and condition for additional, extra-duty, and working pay, charge pay, and specialist pay will continue for the present, but are subject to early revision. The rates of command pay hitherto in force are, in general, doubled.

RATES OF PAY.

Army Medical Department.

Director-General, Army Medical Service: £2,500 per annum, including all allowances except field and travelling.

Deputy Director-General, Army Medical Service: £4 15s. 1d. a day.

Deputy Director of Pathology or Hygiene: £3 10s. a day.

Assistant Director-General or Assistant Director, Army Medical Service: Pay or rank (Colonel or lower) plus 2s. 9d. a day.

Deputy Assistant Director-General: Pay or rank (Major) plus 2s. 9d. a day.

Army Medical Service.

	Per diem. £ s. d.
Major-General	4 10 0
Colonel	3 5 0
Lieut.-Colonel	2 10 0
Lieut.-Colonel, after 20 years' total service	2 12 6
Lieut.-Colonel, after 25 years' total service	2 15 0
Major	1 15 0
Major, after 15 years' total service	2 0 0
Captain	1 5 0
Captain, after 5 years' total service	1 7 6
Captain, after 10 years' total service	1 10 0
Captain, holding higher brevet rank, in addition	0 2 0
Lieutenant	1 0 0
Dental Surgeons—	
Major	1 13 0
Major, after 15 years' total service	1 16 0
Captain	1 3 6
Captain, after 5 years' total service	1 6 0
Captain, after 10 years' total service	1 7 6
Lieutenant	0 18 0

The rates shown for officers of the R.A.M.C. and for dental surgeons will not apply to those in receipt of special rates of pay under contract. Officers serving under contract who are granted the pay and allowances of their rank while holding certain specified appointments will be eligible to draw the rates provided in the new Warrant.

HALF PAY.

The rules as to the conditions of issue of half pay will remain as at present. The rates are as follows:

Substantive Rank when placed on Half Pay.	Per diem. £ s. d.
Major-General	2 5 0
Colonel	1 9 6
Lieut.-Colonel	1 3 9
Lieut.-Colonel, after 3 years as such	1 7 6
Major	0 15 9
Major, after 5 years as such	0 18 6
Captain	0 11 9
Captain, after 15 years' total service	0 13 0
Captain, holding higher brevet rank, in addition	0 1 0
Lieutenant	0 8 0
Lieutenant, after 7 years' total service	0 9 6

RETIRED PAY.

Retired pay will consist of two parts: (*a*) A service element based on the officer's total service; (*b*) a rank element for the rank from which the officer retires. An officer with less than fifteen complete years of service is not eligible for retired pay; but an officer with ten and less than fifteen years' commissioned service may retire with a gratuity of £100 for each completed year of such service. The scale of retired pay for the Army Medical Service will be as follows:

(*a*) Service element—£150 a year after 15 years' service, with an increment of £15 a year for each completed year over 15.

(*b*) Rank element:

Rank from which retired.	After completing one year's service in the rank.	After completing each additional year's service.	Maximum rank element.
	£	£	£
Major	12	12	120
Lieut.-Colonel	150	30	240
Colonel	290	50	390
Major-General	440	50	540
Lieut.-General	590	50	690

The above rates of retired pay, subject to a maximum total for each rank, will be payable as from April 1st, 1919, to all permanent regular officers who, being otherwise entitled, have given paid military service to the satisfaction of the Army Council during the war. Temporary rank held during the great war, followed by substantive promotion to that rank, will count as service in the rank towards retired pay. The existing regulations as to counting of service, the age or service at which voluntary retirement is allowed, and the conditions for compulsory retirement will remain as at present.

In an Army Council Instruction on the new Warrant it is notified that the following emoluments of officers are in all cases subject to income tax:—Pay, corps pay, engineer pay, additional pay and extra-duty pay, children's allowance, furniture allowance. Income tax on service emoluments will continue to be charged at service rates for the current income-tax year; after that date the rates will be those applicable to the rest of the community, in the absence of special legislation to the contrary.

With regard to officers of the Special Reserve and Territorial Force, it is notified that in the absence of special instructions

Table of Total Emoluments.

Rank.	Pay.	Rations.	Servant.	Married.			Unmarried.		Total per Annum.	
				Lodging.	Fuel and Light (average)	Furniture Allowance.	Lodging.	Fuel and Light (average)	Married.	Unmarried.
	£ s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£	£
Lieutenant	1 0 0	2 1	2 0	3 6	1 0	2 0	2 3	0 10	558	495
Captain...	1 5 0	2 1	2 0	4 6	2 0	2 0	3 0	1 2	685	622
Captain, after 5 years	1 7 6	2 1	2 0	4 6	2 0	2 0	3 0	1 2	731	652
Captain, after 10 years	1 10 0	2 1	2 0	4 6	2 0	2 0	3 0	1 2	777	698
Major	1 15 0	2 1	2 0	4 6	2 0	2 0	4 0	1 7	868	815
Major, after 15 years	2 0 0	2 1	2 0	4 6	2 0	2 0	4 0	1 7	959	907
Lieut.-Colonel	2 10 0	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,142	1,098
Lieut.-Colonel, after 20 years	2 12 6	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,187	1,144
Lieut.-Colonel, after 25 years	2 15 0	2 1	2 0	4 6	2 0	2 0	4 6	1 7	1,233	1,189
Colonel	3 5 0	2 1	2 0	5 6	2 10	2 0	5 6	1 10	1,449	1,395
Major-General	4 10 0	2 1	4 0	11 0	3 7	2 0	11 0	2 7	2,056	2,001

Charge pay (2s. 6d. to 10s. per diem) and specialist's pay (2s. 6d. per diem) in addition for a considerable percentage of officers (from £45 to £180 per annum additional).

the present rules as to the counting of service towards increases of pay continue to apply, and reference is given to Army Order 286 of 1914, which provides that only mobilized service counts.

Every endeavour will be made to expedite adjustment of pay due under the new Warrant, but considerable administrative complications arise, and some delay is inevitable. The pay for October, 1919, will be issuable at the new rates in every case, but the adjustment of arrears from July 1st, 1919, will take some time.

TOTAL EMOLUMENTS.

As an appendix to the Warrant tables are given for the purpose of showing approximately the total emoluments issuable at present under the new scheme; they refer to officers serving at home and not occupying Government quarters or drawing rations in kind. The totals are published for the convenience of officers, and must not be regarded as the authority for any of the rates laid down in the Warrant and Regulations. A married officer is defined as one who is or has been married, and is 30 years of age or over; but all officers serving on September 13th, 1919, who were then or had then been married, irrespective of age, are eligible for the allowances as "married." As already stated, children's allowance will be given until the end of the year, in addition to the emoluments shown. An outfit allowance will be given on first appointment to a permanent regular commission; the amount will be announced shortly. The above is the table of the total emoluments for the various officer ranks of the R.A.M.C. and Army Medical Service.

R.A.M.C. TEMPORARY COMMISSIONS.

As stated in our last issue, the War Office has revised the terms and conditions for temporary commissions in the Royal Army Medical Corps.

Candidates who have served before will be commissioned in their previous rank. Lieutenants who have completed one year's satisfactory service as such will be commissioned as captains. Those who have not served previously will be commissioned as lieutenants. The period of engagement will be for six months, and the contract will not be terminable by either party prior to the expiration of that period except for misconduct, inefficiency, or medical unfitness.

Pay will be at the rate of: Lieutenants £600 per annum, captains £650 per annum, and in addition the following will be issuable: (1) Pay at the rate of £50 per annum when serving elsewhere than in Europe. (2) Rations or an allowance in lieu thereof (present rate 2s. 1d. per diem). (3) Specialist or charge pay when holding a position for which the issue of such is authorized. (4) Officers holding higher acting or substantive rank than that of captain will, if desirous, be granted the pay and allowances of their rank. Kit and outfit allowance will be issued to candidates who have not previously received such allowance.

All candidates must be fit for general service or garrison duty abroad, and must undergo a medical examination prior to being accepted. Applications should be addressed to the Secretary, War Office, Cornwall House, Stamford Street, S.E.1.

Medical News.

THE Right Hon. Sir Auckland Geddes, K.C.B., M.D., President of the Board of Trade, will distribute the prizes at Charing Cross Hospital medical school on Wednesday, October 1st. The ceremony will take place in the out-patients' hall, at 3.30 p.m., and a reception will be held afterwards at the school, when the laboratories, museum, and library will be open to inspection.

THE Guy's Hospital biennial dinner will take place at the Connaught Rooms on Tuesday, October 28th, at 7 p.m., with Dr. Lauriston Shaw in the chair. Old students who have not received an invitation to the dinner are asked to communicate with Mr. F. T. Steward, 98, Portland Place, London, W.1.

THE old students' dinner of the Westminster Hospital will be held on Thursday, October 2nd, at 7.30 p.m., in the Imperial Restaurant, Regent Street. The honorary secretary is Mr. Rupert Farrant, 51, Harley Street, W.1.

THE old students' dinner of University College Hospital will be held on Friday, October 3rd, in the Imperial Restaurant, Regent Street, with Sir J. Rose Bradford, K.C.M.G., C.B., in the chair. The honorary secretary is Dr. A. M. H. Gray, 30, New Cavendish Street.

THE seventy-eighth session at the School of Pharmacy of the Pharmaceutical Society of Great Britain will open on Wednesday, October 1st, at 3 p.m., when the Pereira medal will be presented, and Mr. W. J. Uglow Woolcock, M.P., will give the inaugural address.

THE annual dinnér of past and present students of the Charing Cross Hospital Medical School, which has been in abeyance for the past five years owing to the war, will be held in the Adelaide Gallery, Gatti's Restaurant, on Wednesday, October 1st, at 7.30 p.m., with Colonel William Hunter, C.B., A.M.S., in the chair. Old students are cordially invited, and are asked to send a note of their intentions to the Dean.

THE Right Hon. Christopher Addison, M.D., M.P., Minister of Health, will give the introductory address at the opening of the winter session of the London (Royal Free Hospital) School of Medicine for Women on Wednesday, October 1st, at 3 p.m.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held at the Connaught Rooms on Saturday, November 22nd, at 7 o'clock. Sir Harry Baldwin will take the chair.

THE opening of the winter session at St. Mary's Hospital Medical School will take place on Wednesday, October 1st, at 3 o'clock. The prizes will be distributed by Lieutenant-General Sir John Goodwin, K.C.B., Director-General Army Medical Service.

THE University Court of St. Andrews on September 12th appointed Mr. James Fairlie Gemmill, M.A., M.D., D.Sc., to the vacant chair of natural history in University College, Dundee.

DR. A. J. CAMPBELL of Uley, Gloucestershire, was recently presented with a testimonial on the occasion of his retirement from the chairmanship of the Panel Committee for the county of Gloucester.

SEVERAL months ago we recorded the holding of a medical conference at Cannes, called by the Committee of Red Cross Societies to formulate an extended programme of Red Cross activities for the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world. To carry out the programme drafted by the Committee with the approval of the Governments of Great Britain, France, Italy, Japan, and the United States, a League of Red Cross Societies was organized in Paris on May 5th. The League publishes from its head quarters at Geneva a *Bulletin*, of which the second number is devoted to the proceedings of the conference at Cannes, and gives the main resolutions adopted by the delegates. The full reports of the various sections may be obtained from the League of the Red Cross Societies, Geneva, Switzerland. The president of the conference was Professor Roux, and the secretary Dr.

Emmett Holt. The chairmen of the sections were: Dr. Ducrey (venereal diseases); Sir Arthur Newsholme (child welfare); Dr. Calmette (tuberculosis); Professor Laveran (malaria); Miss Julia Stimson (nursing); Dr. Hermann Biggs (preventive medicine). The delegates from Great Britain attending the conference were: Colonel S. L. Cummins, A.M.S., Brevet Colonel L. W. Harrison, R.A.M.C., Dr. E. C. Hort, Professor Henry Kenwood, Dr. F. Truby King, Sir John Lumsden, Dr. Kay Menzies, Sir Arthur Newsholme, Sir Robert Philip, and Sir Ronald Ross. The League of Red Cross Societies formed as a result of the conference has as the chairman of its board of governors Mr. Henry P. Davison, of the American Red Cross, and the Director-General is Sir David Henderson. The conference recommended the establishment of a bureau of health—a central organization operating mainly through national Red Cross societies, whose aim it would be to strengthen, aid, and co-operate with other voluntary organizations and national health and relief agencies; also to assist in the establishment of Red Cross societies in countries where none now exist.

AN American hospital is to be established in Havana to meet the needs of the large Anglo-Saxon colony in Cuba. The approximate cost of the site and buildings is estimated at £60,000, half of which amount has already been raised.

IN a debate in the French Senate on a proposal to establish sanatoriums, it was stated that 25,000 French soldiers had died of tuberculosis during the war, while 120,000 men were exempted from service because of the disease.

THE reorganization on modern lines of the Persian Government Hospital, Teheran, has been entrusted jointly to Dr. A. R. Neligan, Physician to the British Legation, and Dr. Joseph Scott, Medical Superintendent of the Indo-European Telegraph Department, Teheran.

THE medical department of the United States army is preparing plans for the construction of an air ambulance capable of carrying two to fifteen patients.

STATISTICS compiled by the New York Metropolitan Life Insurance Company show that 450,000 deaths occurred in the United States from influenza during the recent epidemic. More men died than women and the highest mortality was among wage-earners, especially those belonging to the poorest class.

AN interallied medical mission has gone to Warsaw, at the request of the Polish Government, to study the problem of typhoid fever and other contagious and epidemic diseases which are at present rife in Poland. The mission has been organized by the League of Red Cross Societies. The head is Colonel Hugh S. Cumming, representing the United States Health Service, and the other members are Professor Aldo Castellani of the London School of Tropical Medicine, Dr. G. S. Buchanan of the Local Government Board, and Dr. Visbecq, principal physician of the French Health Service.

IN the recent elections to the Spanish Senate Dr. Nicolas Rodriguez Abaytua was returned by the Academy of Medicine; Dr. Luis Ortega Morejon by the University of Madrid; Dr. Ricardo Royo Villanova by the University of Zaragoza; Dr. Rodolfo del Castillo Ruiz by the district of Albacete, and Dr. Luis Fatás by that of Huesca.

AN Institute of Biochemistry is to be founded in Milan. Its creation is due to a benefaction by Dr. Rizzi, formerly physician to the Ospedale Maggiore, who bequeathed £12,000 for the purpose.

THE report on the work of the Central Midwives Board for Scotland for the year ended March 31st, 1919, has now been issued as a parliamentary White Paper. During the year there were held twenty board and committee meetings. The number of midwives enrolled was 281, of whom 216 were enrolled after passing the Board's examination. The total enrolments to date are 3,591, and the number of practising midwives is about 1,560. There are ten institutions in Scotland at which midwives may be trained, and these are approved annually subject to inspection. During the year seven midwives were cited before the Board under its penal powers to answer charges of malpractice, negligence, or misconduct. In the result three names were removed from the roll. A number of cases of minor offences were dealt with by a warning sent through the M.O.H. Arrangements are now in full working order with the Central Midwives Board for Ireland—and latterly with that for England on its obtaining the amending Act—whereby the reciprocity clause in the Scottish Act is given full effect: thus a nurse who has passed any of the examinations of these boards can be allowed to practise in any country on payment of an enrolment fee.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

COLOUR CHANGES IN FRUIT.

"M.D." asks what is the explanation of the fact that the colour of many fruits alters in cooking. Thus the jam made from green gooseberries is nearly always red, but greengages retain their colour when converted into jam. Stewed pears usually have a brown or red colour, while apples generally retain their colour.

*** The strong coloration which takes place, sometimes very rapidly, in cut or macerated fruit is conditioned by the presence of oxidases, bodies of the enzyme class, which act as carriers of atmospheric oxygen to other oxidizable substances, often of a tannoid nature. A good example is given by the rapid browning of a sliced apple, or of the expressed juice of some white grapes. In the case of the apple the oxidases, when they occur, are present throughout the fruit, but apples from certain countries contain but little. In the grape the oxidases are confined to the inner layer of the skin and the vascular bundles. The banana is rich in oxidases, and colours very readily, and especially on cooking. Heating, if not carried too far, intensifies the action, but oxidases are as a rule destroyed at temperatures below boiling water, so that in the case of jam the coloration is probably produced in the earlier stages of heating. This oxidase-coloration, modified by the natural colour of the extractives of the coloured part of the fruit (which may in themselves be altered by the fruit acids), probably accounts for the cases cited by "M.D." The natural colour of the greengage, as he says, is retained in the jam, and this particular fruit would most likely be found to contain little or no oxidase if tested by the benzidine-hydrogen peroxide method. It is an interesting subject, on which comparatively little work has been done.

STAMMERING.

"A. C." desires instructions for carrying out at home the best method of treatment for stammering, and inquires whether nervine tonics are of any use.

HYPERIDROSIS.

DR. HENRY WALDO (Clifton) writes to recommend to "Sudor" the late Radcliffe Crocker's suggestion, to give a level teaspoonful of precipitated sulphur in milk twice a day. Where it purges too much it may be combined with astringents, as in the following: Pulv. cretae co. ʒvj, pulv. cinnam. co. ʒij, sulphur. praecipit. ʒj; a teaspoonful to be taken twice a day.

DR. CHRISTOPHER KEMPSTER (London) writes: "Sudor" requires a remedy for a patient who suffers from hyperidrosis of the face and head. Hyperidrosis, which is usually considered beneath the serious consideration of the physician, is one of life's worries, and not only is a disagreeable annoyance to its victim but is often a serious social bar on account of its associated odour, and when situated in the axillae, its disfiguring and destroying effect upon ladies' clothing, and in those cases where it takes the form known as "bromidrosis," it is a disgusting disease, nauseating to those around and wrecking to the mental and physical wellbeing of the sufferer. It is surprising, when one considers the discomfort and danger of the wearing of perpetually saturated clothing, that a more serious view is not taken of the complaint by the medical profession, especially when an effective and easy remedy is at hand. During the past years I have followed the line of treatment first introduced by Howard Pirie in the use of *x* rays and have not yet met with a case which has not successfully responded to its influence. Whether the complaint be at the axillae, groins, hands, feet, head, face, or

elsewhere, and whether it be of the simple or of the fetid variety, a carefully conducted course of x irradiations will cure it. In the case of the head and face especial care must, of course, be taken on account of the depilatory action of the rays, which must be carefully guarded against.

PAIN IN ARTHRITIS OF SPINE.

"SPES" writes: I have a patient with rheumatoid arthritis of the spine who suffers severe pain which I can only relieve by morphine injections. Everything else tried has failed to alleviate it. Can anyone who has had similar cases give me any help by suggestions?

LETTERS, NOTES, ETC.

EARLY MORNING QUININE.

CAPTAIN W. ROUS KEMP, R.A.F.M.S., writes: Quinine for malaria should always be administered in the early hours of the morning. Between 5 a.m. and 6 a.m. is the best time, as it is most important to anticipate "sporulation," which always produces its symptoms during the heat of the day. Quinine when absorbed into the system causes an unknown antitoxin to be produced in the blood stream, which hinders or even actually prevents sporulation taking place; hence the necessity of producing this effect in the body as early as possible. The above treatment I have always adopted in cases of malaria, and found the results most beneficial; 10 grains of quinine in powder for a single dose, swallowed by drinking a cup of tea, is easily managed by the patient. As no authority on malaria states at what time during the twenty-four quinine should be administered, I consider from my own observation that this anticipation of the fever by early morning treatment would be of some value.

ALCOHOL AND VENEREAL DISEASE.

CAPTAIN J. R. HOWITT, R.A.M.C., in the course of a letter written from Egypt, says: I was delighted to read in the JOURNAL of August 2nd a letter from Fleet Surgeon W. E. Home, R.N., on the relation of alcohol to venereal disease, for I am certain that the former is in a very large number of cases, if not in the majority, the precursor of the latter evil. The effect of alcohol in excess upon the stomach, liver, and other organs of the body is well recognized by all, but probably its effect upon the mind is less generally emphasized. Alcohol acts in three directions upon the mind, (1) perversion of judgement, (2) weakening of the will power, and (3) aphrodisiac. Could any better agent be devised to pave the way before the fall? I understand that alcohol is the means most frequently employed by procurers in this traffic both to entice men and in securing women. Alcohol is, then, the great ally of venereal disease. Any effort, therefore, to eradicate the evils of venereal disease and immorality from our midst will indeed prove to be barren unless together with it the campaign is equally urged against the evil of intemperance. We hear much to-day of "prophylaxis" to prevent venereal disease, but it is not uncommon to find a patient who, though fully instructed, was too incapable or indifferent at the time, because of drink, to worry about such uninteresting details. Prophylaxis in the true sense of the term must go deeper down than merely the issuing of "E.T. outfits"; it must prevent the possibility of a man becoming intoxicated and so open to every snare. Now is the opportunity for all who hold the interests of their country at heart to use their influence in favour of prohibition.

PARTURITION AT ADVANCED AGE.

DR. G. BRYCE (Birmingham) writes: A patient of mine, aged 49 years and 7 months, has been delivered of a living child. The extraordinary fact in the case is that the woman ceased to menstruate five years ago. She naturally did not expect to have more children. There has been an interval of twelve years since her previous confinement. This case illustrates the difficulty one has in fixing the period when pregnancy could not take place. Women over 45 years of age, when menstrual periods become irregular, are often anxious to know whether they can become pregnant. The case indicates that our opinion should be very guarded. The relation between menstruation and pregnancy is a very interesting subject, which still requires investigation. Dr. P. H. Walker in your issue of August 2nd states that he has known of one woman who never menstruated though she had children, but he does not mention how many. I have known of several women who have had three consecutive normal labours without menstruating after the first pregnancy. But I have never known another case where a woman has ceased to menstruate when over 44 years of age and has given birth to a child several years after. It would be interesting to know whether many other cases are on record.

*** The late Dr. F. J. Smith published in the BRITISH MEDICAL JOURNAL of March 10th, 1917, an inquiry as to the oldest age of parturition. Several casesat ages over 49 were related; but Dr. E. R. F. Mason of Gomersal reported (BRITISH MEDICAL JOURNAL, March 31st, 1917, p. 442) one in which it appeared, from entries in a local church register, that the woman was over 51. She was born on February 13th, 1820, and her eleventh child on April 21st, 1871. She died in March, 1900.

HOME HOSPITAL ESTABLISHMENTS AND WAR MEDALS.

"IGNORED" writes: I wish to call attention to the gross unfairness of laying down a geographical qualification for the 1914–15 Star, General Service and Victory Medals—at all events, as regards the medical establishments. This decision is contrary to precedent. The hospitals in this country have, equally with those in France, been associated with the fighting forces. They have taken wounded practically direct from the battlefields—Americans, Belgians, Chinese, French, Serbians, beside the British and Dominion troops; yet, having performed these services to our allies, we alone of all the allied forces are not to have the Allies Medal. Elderly medical men in the R.A.M.C., whether Reserve, Special Reserve, or Territorial, were called up in August, 1914. Often this entailed the abandonment of private practices and serious financial loss. We have been in charge of, or performing important services in, large general hospitals and their auxiliaries, or in the military hospitals and training camps, and we have been kept in this country because we could not be replaced. We have been overwhelmed with work which has been absolutely essential, yet we have not been considered to be entitled to the medals because we have not crossed the Channel. It is sought to justify this discrimination by excluding this country from the list of "war areas." But we who, by the exigencies of the service, were retained here have been declared to be "on active service," and have drawn "field allowances." Hitherto the necessary corollary to such conditions has been the issue of the medal granted for the campaign. It is suggested that hospital and medical services rendered in this country should be recognized by the issue of the General Service Medal, without the clasps which will no doubt be granted for service in particular battles or war areas; and that the Victory Medal should be given with date clasps. Any other distribution is most unfair to those who have formed the personnel of the hospitals and medical establishments in this country. With the exception of a few commandants, the V.A.D. workers have been ignored. Practically all of us are now returning to civil life, with absolutely nothing to indicate that our services have been appreciated, or that we have done our duty in accordance with the orders of the higher authorities; but I am confident that I speak for my medical colleagues when I say that we desire no decorations which are not shared by the whole male and female personnel who have so nobly sacrificed themselves to tend and succour the sick and wounded in the hospitals of this country—services which have been absolutely indispensable to the victory of the Allies, and which are universally recognized as reflecting the utmost credit and honour upon all concerned.

RECORD CARDS.

DR. THOS. M. CALLENDER (Sidcup) writes: Dr. Adam Fox (p. 291) emphasizes the uselessness of keeping these cards for patients who are *able* to work, but he seems to think it might be useful to keep these cards for patients who through illness are *unfit* to work. Personally, I fail to see any point in the general practitioner keeping record cards at all. In cases of patients suffering from illnesses unfitting them for work we give certificates weekly for their approved societies, stating the malady from which they suffer. The State could surely by arrangement with the societies get any information regarding these patients which would be useful from a statistical standpoint with a great saving of expense and labour. If the State insists on record cards being kept, I would suggest that each patient be provided with a card with his or her name stamped upon it, and this could be presented to the medical man in cases of illness to get the nature and duration of illness endorsed on it. At the end of each year the patient should send the card, if used, to the central authority or approved society.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 47, 48, 49, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 44, 45, and 46.

THE Chief Inspector of Factories announces the following vacant appointment: Malton (York).

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